

# CLINICAL · MEDICINE AND · SURGERY

VOL. 39

AUGUST, 1932

No. 8

## Guy de Chauliac (The Father of Surgery)

THE Dark Ages were not so dark as we sometimes think—or, at least, the darkness was only relative and local—for when the stifling cloud settled down on Greece and Rome, after the fall of the Roman Empire, culture, too virile to be killed, shifted to Arabia, from which it was gradually brought back to western Europe, beginning in the thirteenth century A.D., and one of the foremost among those who undertook this worthy work was Guy de Chauliac (also known as Guy de Chauliac or Guido de Chaulhaco).

Of the exact date of de Chauliac's birth (which is given in the histories as 1298 and 1300) and of his early life, little is known with certainty, except that he was a country boy from the hamlet of Chaulhac, on the frontier of Auvergne, France, who, through the patronage of influential friends, was enabled to obtain a very fine education at Montpellier (where he received the degree of Master of Medicine, the title of Doctor of Medicine being introduced a little later), Toulouse and Paris, and later a special course in anatomy at Bologna, Italy, under

Bertucius, and who abundantly made the most of his opportunities.

Like most educated men of his time, Guy took holy orders and, in fact, became something of an ecclesiastical dignitary, having been Canon and Prévost of the Chapter of St. Just, at Lyon, and personal physician and "Commensal Chaplain" to Popes Innocent VI, Urban V and Clement VI. As a matter of fact, almost all Christian physicians of that day were also clerics.

In the fourteenth century the universities did not recognize nor teach surgery, considering it a rather low craft, fit for the talents of barbers, but Master de Chauliac saw it in a different light and, though he called himself a *physicus*, devoted most of his time and effort to raising the surgical branch of his art to a place of dignity and respect, so that he may justly be called the Father of Surgery, as Hippocrates is called the Father of Medicine.

As an operator, his skill, dexterity, judgment and boldness are said, by some, to be at least equal to those of the surgeons of today. Though a competent anatomist, he

hesitated to "cut for the stone," but was one of the first to operate successfully upon hernias and cataracts. He believed in cutting out cancers, at an early stage, with the knife, but employed the actual cautery on the fungous varieties. He suspended broken bones in a sling bandage, used weights and pulleys in treating fractures of the thigh, classified hemorrhages as arterial and venous, and was familiar with the dentistry of the period.

He did not confine his work solely to surgery, but practiced his profession in a more or less general way in Avignon (where he remained heroically at work during the plagues of 1348 and 1360, when other physicians fled from their posts of duty in fear) and at Lyon, in which latter city he died in 1368.

Guy was a writer of unusual erudition and possessed a fine critical and historic sense. He was thoroughly familiar with the works of the great Arabian and Moorish physicians—Rhazes, Avicenna, Haly Abbas—and, through them, of Galen, of whom he was a sincere follower, rather than of Hippocrates.

His great masterpiece was his *Chirurgia Magna*, written in 1363, which comprised seven treatises—Anatomy, Aposthemata (abscesses), Wounds, Ulcers, Fractures and Dislocations, Special Diseases and an Antidotary—with a chapter on medical history which was the only important discussion of its kind between Celsus and Champier.

This monumental work was translated (partly during his lifetime) into Latin, Spanish, Dutch, German and English and, complete or in abridged form, became the standard text on surgery, all over Europe, until as late as the beginning of the eighteenth century. A translation of the treatises on Wounds and on Fractures and Dislocations was made in the United States, in 1923, by W. A. Brennan.

Curiously enough, this great gentleman, erudite scholar and skillful surgeon, founded no school and had few pupils who,

to any notable degree, approached the luster of his own achievements. In fact, Garrison says that his reactionary attitude (following Galen rather than Hippocrates), to the effect that it was the surgeon's interference, rather than the powers of nature, which brought about the healing of wounds, delayed the progress of surgery (because of the weight of his authority) for 600 years.

But from his errors, as well as his successes and his constructive contributions to medical knowledge, much can be learned by a study of this truly great surgeon and physician of the opening decades of the Renaissance.

---

One comes to know by having faith and daring to act upon it. To say, "I know," is the end of all experience.—WILL LEAVINGTON COMFORT.

---

## PUBLICITY

WE wonder, sometimes, how our friends, the osteopaths, succeed in putting their propaganda across with so many really thoughtful people; but anyone who is seriously interested in finding out will not need to travel a long or complicated road in order to do so. *They stick together and keep their ideas before the public.*

Here is one of the objectives of the American Osteopathic Association, quoted from an editorial in their *Journal* for January, 1932:

"Publicity, to the end that the general public may be made intelligently aware of just what osteopathy is and what it has to offer, is a great and useful service. Wise, judicious and continued use of osteopathic literature is one method of proven value and one that has made for our profession hundreds of thousands of well informed friends. The younger members of our profession should more and more appreciate the value of public contacts through civic work, community interests and public welfare activities. To be a qualified osteopathic physician, to be a good citizen in our community and state, to have a real place in the building and perpetuating of a great humanitarian profession, constitutes an ideal worthy of all that anyone may bring to it."

| The editorial goes on to cite instances

of nationally known products which are still advertised as actively and continuously as ever, because their makers know that that is the only way to *keep* them nationally known. Then follows this concrete application of the idea:

"Osteopathy is a service. It is tremendously worth while. It can be explained. It appeals to thinking men and women. There is a great need for what it has to offer. There is a great lack of accurate understanding. What is the answer? Persistent publicity from as many angles as are honest, logical, interesting, altruistic, and sincere. Then follow up, follow through and repeat with emphasis, and continue the repetitions."

It is impossible to patent good ideas, as such. They belong to anyone and everyone who can understand and apply them, and the sensible man is on the lookout for them and appropriates them for his own use, without any squeamishness or superstition as to their origin.

Our friends on the left seem to have a real idea here, and, if we do not lay hold of it and put it to work, it is our own fault and we have no just ground for bellyaching if they shove us about a bit.

Surely, we do not think that Medicine, as a service, is less worth-while, less interesting to the public or less logically explainable than is Osteopathy! Then why our timidity and shrinking reticence in telling people what Medicine is and can do and has accomplished in the past few decades for the amelioration of human suffering?

The answer is found in our obsolete and short-sighted interpretation of that fetish of the profession, Medical Ethics, which so few physicians have ever taken the time and trouble to really understand.

There are sound arguments against personal advertising of the skill and ability of individual physicians (though it is done regularly, by or in regard to those who are sufficiently well known to be more or less beyond censure), but there are none against telling the general public about what medical science is, has accomplished and can

do to help individuals out of their troubles.

The sooner we stop bawling about the encroachments of the irregulars, take a leaf or two from their book of procedure and broadcast, collectively, the details of what we have to offer; and, especially, the sooner we, individually, develop a sense of professional solidarity and enthusiasm and set about making ourselves such efficient healers of the sick that there can be no reasonable comparison, the better it will be for everyone concerned, including the irregulars themselves, for the good ones will be forced to come into the fold, and the poor ones can go back to some occupation where they can render a real service to society, instead of simply aggrandizing themselves at its expense.

---

Blessed are they who have the gift of making friends, for it is one of God's best gifts. It involves many things, but above all, the power of going out of one's self, and appreciating whatever is noble and loving in another.—THOMAS HUGHES.

---

## PEDESTRIANISM

THE statement has been made recently that the people of the United States own nearly 26,000,000 automobiles. That means that there is one for almost every family in the country. Of course, some families have several cars, and that reduces the average, but the fact remains that practically every family not in absolutely destitute circumstances either owns or has access to a motor car of some kind or other. The result has been a shocking decline in the gentle and worthy art of pedestrianism.

One hears people talk about going out in the car to commune with nature. The driver who does any appreciable communing while going at fifty miles an hour or thereabouts will pile up his vehicle, himself and his passengers in the ditch very promptly. The only view he can safely enjoy is that of a ribbon of grease-streaked concrete, and the prevailing aroma in the nostrils of most motorists is that of exhaust gases, gasoline and cylinder oil.

Even the passengers, pecking out of the windows as the landscape whizzes by, can see nothing but signboards and a blur of green.

If the destination of the trip is some sylvan glade, it is probable that a score or more of others have had the same objective, for the motorist never discovers any places of recreation except those which are reasonably near a concrete highway and known to many others. So he finds himself in the midst of a crowd, doing the inane, ridiculous or pernicious things that crowds always do, including the polluting of the vicinage with papers, cans, bottles, banana skins and other disgusting offal.

Another distressing situation is that most men, upon acquiring title to any sort of mobile collection of power-driven steel, wood and rubber, seem to forget that they ever made use of their God-given legs and to look upon all pedestrians as some low form of animal life, deserving no different treatment from that accorded to a cockroach.

This condition of things may be a convincing demonstration of the fact that we live in a mechanized age, but it is full of evil omen for the development of a truly worthwhile civilization, which cannot come to flower except where many men think much.

Except those who employ an automobile as a means of transporting them to and from the scenes of their business or legitimate pleasures, the vast majority of people use motoring as a substitute for thought and give more consideration and conversation to the number of miles they have covered in a day than to what they may have seen while doing it.

In order truly to see the world around us, we must *walk through* it, with every sense alert and the mind open to catch the suggestions which Nature will make to us at every furlong; stopping to look at, listen to or smell all the hundreds of delightful sights, sounds and fragrances

which will greet us at each step. And the further the hard roads are left behind, the richer the experience will be. Two miles of observant and contemplative wandering in deep woods or open fields are worth 200 of flickering through a noisy, populous and stereotyped vista of hoardings, sign posts and hot-dog stands.

Years ago, Nietzsche declared that thoughts conceived while walking are usually of more value than those which occupy the mind at other times. Einstein agrees with him, and Stewart Paton proclaims the same opinion. The idea is worthy of serious consideration.

Walking is, or may be, a bit of *real living*; while motoring for "pleasure" is, as a very general rule, merely charging through existence at breakneck speed, for fear a worthy thought will overtake us.

Life waits for no man. We live it *today*, or not at all. He who delays his living to some remote and dimly-seen future, is in grave danger of dying before he has actually lived at all.

Walking is an exercise, a recreation, an avocation open to all whose legs or wills are not seriously crippled. Its practice requires no apparatus except that provided by nature, no particular costume nor specially prepared location, and costs no money. If woods and fields are beyond reach (and, except for those living in the heart of great cities, such a limitation is largely psychic), the streets may be made to yield large increase to the true pedestrianist—not the mere pedestrian or idle-brained stroller.

That is the big secret! It is good to walk, as mere exercise, for the purpose of getting to our not-too-remote, destinations; but, to make walking the great agency of soul expansion which it is capable of being, it must be pursued with zeal and eagerness, as a hobby—almost as a religion—with the conviction that it is, not simply a means to an end, but, to a degree, an end in itself.

If we had more ardent and convinced



pedestrianists, the disgraceful toll of death and suffering which automobiles claim every year in this land would be materially reduced, for your true pedestrianist has a kindly fellow-feeling for all human beings who proceed from one place to another on their two feet and is careful of their lives and limbs.

Now is the time! No other will be "just as good." The woods, the fields, the streams—yes, even the streets—the whole Earth—are calling the pedestrianist and will richly repay his enthusiasm.

---

A generation that ceases to walk will cease to see the things that matter.—WARWICK DEEPING.

---

### THINGS

SEVERAL years ago there appeared in the *Saturday Evening Post*, a striking cartoon.

In the foreground stood a particularly sappy looking specimen of the sort of runt generally used by cartoonists to typify the ordinary citizen. Cluttering up the background were a large house, an automobile, a safe, a hunting lodge, several bundles of bonds and bags of money and two or three smug, fat women. Around the man's ankles, wrists and waist were iron bands, to which were attached chains connecting him to all the objects in the background. The blurb coming from his stupidly grinning mouth said, "Look at all the things I own!"

And, beyond a certain point, that is about the size of it. A reasonable amount of money is essential to freedom of living. Certain articles of use or beauty or both (but these are, relatively, very few) make life smoother, richer and more satisfying and increase that leisure which is essential to the growth of the soul. Beyond this the accumulation of possessions leads, not to expansion and enrichment of the life, but to diminution—to slavery! Things become the relentless jailers of those who live for them.

The essential factor for happy and valu-

able living is *action*, not possession. The man who is *doing* worthy things, helpful things, and doing them *well*, is a man to be envied by those who are simply possessors, no matter on how grand a scale.

Moreover, the man who does things well, for the joy of others and the welfare of his community and the Nation, will not fail to receive as large a measure of the things of the world as will emancipate him from the burden and fear of that poverty which blights the higher life, even though he never acquires such a mass of tangible property as will make the eyes of his neighbors blaze with envy.

If ownership helps one toward freedom it is good—to just the extent that it does so; if it hampers and enslaves one it is bad. Careful thought is needed to locate the turning point and stop short of it, but the result is worth the effort.

---

The cynic is the man who knows the price of everything, and the value of nothing.—WILDE.

---

### SYSTEM IN THE OFFICE

THE businesses, of all kinds, that are running along reasonably satisfactorily in these tough times, are those which were operated on a sound and intelligent system before the crash came; and the business of physicians is no exception to the rule.

Some doctors are inclined to resent having their profession alluded to as a business, even if it is the job by which they earn their daily bread, but a little thought will show that, no matter how high the plane upon which professional relations with patients are maintained, there is another strictly business side to clinical practice, which must be organized along rational lines and carried out with military exactness, if the physician is to achieve even reasonable economic success. That side alone is the subject of this discussion.

One of the most important matters is the upkeep and management of the office. A clean, smart, attractive waiting room will attract and hold patients, while the

other kind will drive them away. The same thing is true of the consulting room. Piles of unread journals, dirty bottles and a general appearance of disorder and inattention, are apt to make people think that the doctor's brain may resemble his surroundings.

Punctuality is another matter of great importance. Even the man with a small practice should keep regular office hours strictly, make appointments with patients when possible and see the patients who have appointments *on the dot*. The man who comes at ten A.M., by appointment, and has to wait an hour, is rather unlikely to come again. If an examination takes more time than was expected, it is better, if possible, to finish it the next day and see the patients who are waiting.

Equally important is the matter of conducting financial affairs on a strictly business basis. That means disussing the dollars and cents end with chronic or

surgical patients at the beginning; looking up credit ratings and demanding cash when these are shaky; arranging for deferred payments of large bills through a financing company; collecting cash from casual office patients; and sending out statements to every debtor every month, with a follow-up.

The doctor who keeps his meal hours sacred and takes his vacations regularly, may lose a patient now and then, but in the end he will develop the kind of practice that is reliable and satisfactory and will reap happiness and success.

It is all a matter of a system, well thought out and then stuck to. Those who are practicing on a chaotic basis had better develop a system, and those whose plan is incomplete or works poorly will do well to adopt a better one, for the hit-or-miss, go-as-you-please practitioner has small chance of surviving under present conditions.

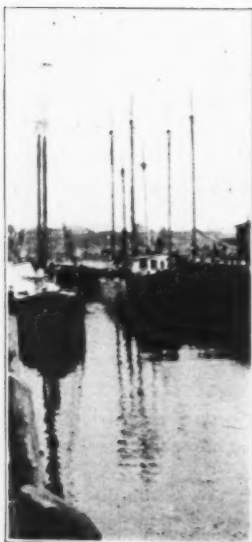


Photo by G. B. L.

#### IN HARBOR

*After the gale, the harbor.  
When the day's work is done  
Strong craft of the fishermen  
Sail home one by one.*

*When we have toiled and struggled,  
Giving the world our best,  
May we, too, find a harbor,  
Of safety and blissful rest.*

G. B. L.

## LEADING · ARTICLES

### The Treatment of Anemia by Intravenous Injections of Organic Salts of Iron, Arsenic and Copper

By Edmund L. Gros, M.D., Paris, France  
Chief of the Medical Staff, American Hospital of Paris

THE epoch-making discovery, by Minot and Murphy, of the curative properties of liver in pernicious anemia was the signal for a series of remarkable studies on the etiology, pathology and treatment of anemias in general, by various American scientists.

Among these the most noteworthy are Hart, Steenbock, Waddell and Elvehjem,<sup>1</sup> who discovered, while experimenting on the nutritional anemia of young rats, the curious and important role of copper as a synergist to iron.

Today, many clinicians treat their anemic patients, both adults and infants, with a mixture of iron and copper by mouth.<sup>2</sup> It has been found that, in most cases, very large doses of iron are necessary. According to Mills,<sup>3</sup> saccharated ferrous carbonate should be prescribed in doses reaching 4 Gm. (60 gr.) daily, associated with 0.05 to 0.10 Gm. of copper sulphate a day.

The large doses of iron, associated with a rather irritating salt of copper, are not without drawbacks. They often produce dyspeptic symptoms, which in cases of nutritional anemia, due precisely to gastrointestinal disturbances and bad assimilation, can only aggravate the condition of the patient. It is in these cases particularly that an intravenous medication is especially indicated.

#### INTRAVENOUS FORMULA

Some twenty years ago we recommended a formula for intramuscular or hypodermic treatment of anemia which still has a vogue

today. I refer to iron and sodium cacodylate, associated with sodium glycerophosphate. This association and concentration was not intended for intravenous administration, and we sought to find a suitable formula, utilizing the organic salts of iron and arsenic, in combination with a salt of copper.

These experiments were carried out at the American Hospital of Paris. Our first solution contained iron cacodylate, 0.01 Gm., with sodium cacodylate, 0.02 Gm. (1/6 and 1/3 grain). With the assistance of Dr. Simone Moissonnier, chief of laboratory, we tried out this solution on a series of animals and found that it was nonirritating when injected into the tissues of rabbits, and non-toxic in very large doses when injected into the veins.

We then added sulphate of copper, one milligram, and found that there was a depressing action from this particular salt; we therefore chose the formate of copper, as being an organic salt, closely allied to the cacodylates. This solution remained very stable and its effects on blood regeneration were more marked than with the sulphate of copper or with the copper-free solution.

The formula we have adopted is the following:

Iron cacodylate .....	0.0100 Gm.
Sodium cacodylate .....	0.0200 Gm.
Copper formate .....	0.0005 Gm.
Isotonic salt solution.....	5 cc.

This is put up in glass ampoules and sterilized at 100° Centigrade, for 20 minutes.

## TESTS OF THE SOLUTION

*Experiments on Animals*

1.—One-half (0.5) cc. of the solution was injected, every other day, into a rabbit suffering from hepatic coccidiosis. Before the injections the blood contained 3,200,000 red cells per cubic millimeter and after 8 injections they increased to 4,200,000.

2.—A daily injection, given to a sheep suffering from *Distoma hepaticum*, during 6 days, increased the red cells from 2,150,000 to 3,050,000.

*Injections in Patients*

Some of the first patients who received these injections, complained, some 20 minutes after the intravenous injection, of articular and muscular pains, which disappeared in about an hour. At first we thought that this was due to the drugs—a sort of hemoclastic shock of Widal—but we soon discovered that this was not the explanation. In order to dissolve the iron cacodylate properly, a certain amount of acid had to be added to the solution. In studying the pH of the ampoules, we found that, according to Sorenson's nomenclature, the pH was 5.4 (the pH of the blood, according to van Slyke, ranging from 7.30 to 7.40). The 5.4 solution, injected into the blood stream experimentally, produced an attack of transitory articular rheumatism by momentarily lowering the alkaline reserve of the body. With a pH of 5.8 to 6, the solution caused not the slightest local or general reaction. This is an essential detail in the preparation of the ampoules.

## NATURE OF THE ORGANIC SALTS

The cacodylates were introduced in therapeutics by Armand Gautier, in 1899. They are organic forms of arsenic, distinguishable from an inorganic salt by their combination with a carbon atom. They are almost non-toxic (though cacodylate of sodium contains 54 percent of its weight of arsenic), which does not mean that they are inert as therapeutic agents. For many years sodium cacodylate has been used, intravenously and intramuscularly, in endocarditis, syphilis, pernicious anemia and various skin eruptions.<sup>4</sup> In fact, Ravaut, of the St. Louis Hospital, in Paris, injects doses ranging from 0.20 to 0.50 Gm. and up to 1 Gm. intravenously in skin diseases, without the slightest toxic effect.

The cacodylate of iron contains 48 percent arsenic and 52 percent iron and possesses the therapeutic qualities of both metals. But the cacodylates, in order to be non-toxic, must either be injected intramuscularly or intravenously. If taken by mouth they often impart a garlic odor to the breath, which is due to the formation of an oxide of cacodyle, which may be poisonous.

Some authors, like Isaacs, Raphael<sup>5</sup> and Robschey-Robbins,<sup>6</sup> doubt the utility of arsenic in anemia, but their investigations evidently applied to that metal alone, unassociated with iron and copper. The former seems to strengthen and enhance the action of the two other metals.

Charles Aubertin and Mouquin<sup>7</sup> believe that "Arsenic encourages the production of red cells and iron favors the formation of hemoglobin. Together they form an admirable association."

Claude F. Forkner<sup>8</sup> finds that arsenic has a wonderful effect on the hematopoietic organs, as is exemplified in cases of latent myelogenous leukemia.

**Copper Salts.**—The presence of copper in the blood and animal tissue has been known for many years. Millon, in France, in 1848, found 2.5 percent of copper in ashes of animals.

Porter<sup>9</sup> states that copper is a normal constituent of human blood; but the real function of copper in red-blooded animals was demonstrated only within the last few years, by the works of McHargue and of Hart, Steenbock, Waddell and Elvehjem. These authors conclude that copper plays an important function, not only in the formation of hemoglobin, but also in the metabolism of all animals having red blood. Waddell and his co-workers, already quoted, have proved beyond doubt the importance of copper in the body and its constant presence in the blood, liver and various organs. McHargue has even gone so far as to state that the efficiency of the liver treatment in anemia is, to a great extent, due to the copper contained in that organ, a daily Murphy ration of 300 Gm. representing about 4 mgm. of copper.

In all these experiments on animals, the salt of copper used was the sulphate. In my experience, this salt is not suitable for intravenous use, so we sought for a salt more closely allied to the organic group, and chose the formate ( $\text{H CO}_2 \text{ Cu } 4\text{H}_2\text{O}$ ), which contains 28 percent of copper.

The formates are all tonic drugs, sodium formate having been long prescribed, by the German and French schools, as a general tonic, a property which copper formate seems to possess.

#### CATALYTIC ACTION

When iron is administered by mouth, very large doses are necessary in order to obtain therapeutic results, even in the presence of copper. In the intravenous form of medication, very small doses suffice. In fact, in our formula, the quantity of salts is so small that it is difficult to understand their potency unless one admits that they exercise a sort of a catalytic action in the body, stimulating the blood-producing organs, exciting the vital functions and liberating the iron which, for some unexplained reason, remains imprisoned in the liver and various other organs. Otherwise how would it be possible for 10 intravenous injections of the solution, representing in all, about 5 centigrams of metallic iron, to increase the hemoglobin of the blood, as in Case 5, 20 percent in 7 days? Normally, the total blood of an adult contains about 3 Gm. of iron. This increase of 20 percent would, therefore represent, 50 centigrams of metallic iron, or 10 times the quantity of iron injected!

I know that some authors object to intravenous injections, and no doubt this prejudice is justified when oral medication is just as effective, but when results can be obtained in much less time, which apparently are more durable, this method of treatment should be preferred.

The attached histories will show the effects of this medication is secondary anemia. Needless to state that, in all cases, accessory hygienic and dietetic measures should be applied. The causes of the anemia should be sought and, if possible, removed. Frequently there is an obscure underlying organic condition. A frequent cause of anemia is repeated loss of blood from the alimentary tract, from gastric, duodenal or intestinal ulcers (Case 1), latent carcinoma or even ordinary intestinal parasites. The patient's habits of diet should be studied and advice given about food containing a high content of iron, such as liver, kidney, tripe, spinach, cabbage, apricots, peaches, prunes, etc.

#### METHOD OF TREATMENT

Inject the contents of an ampoule (5 cc.)

into a vein of the elbow (preferably the median basilic or median cephalic) every day, or every other day, for 10 or 12 injections.

A period of rest of a week should be allowed, and then another series of injections started, if the blood is not sufficiently improved.

Naturally, a complete blood count should be taken before and after the treatment.

*Precautions to be taken.*—Use a small needle, in order to cause as little trauma to the vein as possible. Do not push in the solution unless assured of being in the vein, by the appearance of return blood through the needle. *Inject slowly.*

*Effects of the injections.*—1.—A marked feeling of stimulation and wellbeing, experienced almost immediately after the injections;

2.—An improvement in appetite;

3.—A rapid increase in red cells and hemoglobin, at times after 10 or 12 injections.

#### REPORT OF CASES

Fifty (50) cases were treated at the American Hospital of Paris and in private practice. A few typical cases are here recorded, in brief outline.

Case 1.—Mrs. W.; post-hemorrhagic anemia; intestinal hemorrhage, probably due to duodenal ulcer; red cells, 1,200,000; hemoglobin (Hgb.), 23 percent.

Two transfusions were given. After 5 days the red cells numbered 1,600,000; Hgb., 20 percent.

Intravenous iron compound injections were given daily. After 9 injections: red cells, 2,100,000; Hgb., 33 percent. After 16 injections: red cells, 2,500,000; Hgb., 53 percent.

Case 2.—Mrs. R., Dr. Winstel's patient; post-hemorrhagic anemia; uterine trouble; red cells, 2,400,000; Hgb., 40 percent.

Transfusion was given. After 4 days, with liver treatment and iron by mouth: red cells, 2,000,000; Hgb., 40 percent.

After 7 daily intravenous injections of iron compound, exclusive of any other treatment: red cells, 3,600,000; Hgb., 62 percent.

Case 3.—Mrs. B.; anemia from focal infection; chronic running ear with involvement of mastoid; general condition so poor that Dr. Le Mée could not operate; red cells, 3,600,000; Hgb., 73 percent.

After 16 daily intravenous injections of iron compound: red cells, 4,300,000; Hgb., 87 percent; general condition greatly improved and local infection so much better that the operation was postponed, the mastoid symptoms having disappeared.

Case 4.—Mrs. C., anemia from severe infection of leg, the result of a diathermic burn; red cells, 2,600,000; Hgb., 52 percent.

After 20 daily intravenous injections of iron



compound: red cells, 4,500,000; Hgb., 70 percent.

Case 5.—Miss McL.; anemia; asthenia; neurasthenia; mental and physical depression; red cells, 3,600,000; Hgb., 70 percent.

After 7 daily intravenous injections of iron compound: red cells, 4,600,000; Hgb., 90 percent; disappearance of all feeling of depression; general optimism and wellbeing. Remained in the hospital only 10 days.

Case 6.—Mrs. M.; mitral lesion, in a woman of 65 years; great depression; physical weakness; red cells, 3,500,000; Hgb., 73 percent.

After 9 daily intravenous injections of iron compound: red cells, 4,500,000; Hgb., 85 percent; marked general improvement.

Case 7.—Mrs. W., age, 67, with old mitral lesion; great weakness, causing her to abandon a Continental trip; red cells, 3,300,000; Hgb., 65 percent.

After 21 intravenous injections of iron compound: red cells, 3,500,000; Hgb., 75 percent. Though improvement in blood condition was not very marked, there was a great change in general health, the heart was much stronger and the patient was able to resume her trip.

Case 8.—Mrs. F., severe attack of purpura hemorrhagica, post-influenzal, with hematuria, metrorrhagia, ecchymoses, epitaxis, etc., necessitating an immediate transfusion. In addition, calcium was administered and intravenous ferrocenicocupric solution given on arrival at hospital; red cells, 2,800,000; Hgb., 76 percent; blood platelets, 217,700.

Daily intravenous injections were given. After 6 injections: red cells, 3,260,000; Hgb., 68 percent; blood platelets, 160,000; total disappearance of all purpuric symptoms. After 15 injections: red cells, 3,976,000; Hgb., 75 percent; blood platelets, 350,000. After 20 injections: red cells, 4,772,000; Hgb., 86 percent; blood platelets, 366,000.

### SUMMARY

#### 1.—Intravenous injections of the caco-

dylates of iron and of sodium, associated with formate of copper, are rapidly efficient in improving the blood picture of secondary and idiopathic anemias.

2.—In addition to this result on the regeneration of the blood, they exert a remarkably tonic and stimulating effect on the organism.

3.—The potency of the drugs is due, not to their bulk, but to a catalytic action of the organic salts, exerted through intravenous administration.

4.—The injections are non-toxic and offer no contraindications.

### BIBLIOGRAPHY

- 1.—Hart E. B., Steenbock, H., Waddell, J., and Elvehjem, C. A.: Iron in nutrition: copper as supplement to iron for hemoglobin building in rat. *J. Biol. Chemistry* 77:797, 1928.
- 2.—Lewis, M. S.: Iron and copper in treatment of anemia in children. *J.A.M.A.* 96:1135-38, April 4, 1931.
- 3.—Mills, E. S.: Treatment of idiopathic anemia with iron and copper. *Canad. M.A.J.* 22:175, Feb., 1930.
- 4.—Loeser, D., and Konwiser, A. L.: Causes of reactions following the intravenous injection of iron compounds. *J. Intrav. Therapy*, London, 5:7, May, 1926.
- 5.—Isaacs, Raphael: The effects of arsenic on the maturation of red blood cells. *Folia haematol.* 37: 389-404, 1928.
- 6.—Robschelt-Robbins, F. S., and Whipple, G. H.: Blood regeneration in severe anemia: XI. Iron effect separated from organ effect in diet. *Am. J. Physiol.* 83:76-83, Dec., 1927.
- 7.—Aubertin, C., and Mouquin: "Nouveau Traité de Médecine." T. IX, p. 241.
- 8.—Forkner, C. E. and Scott, T. F. M.: Arsenic as a therapeutic agent in chronic myelogenous leukemia. *J.A.M.A.* 97:3-5, July 4, 1931.
- 9.—Porter: "Principles of Chemistry," Chicago, 1875.

### MONEY

When a man is sick and yet continues to do his work, he realizes for the first time that his product is his life. And when he receives his pay, he says to himself: "This money is me. It is so many heart beats; so many breaths; it is so many hours of the few I have to live." And thus when he gives a little of his money to those whose needs are greater than his own—different, rather—he can say in truth: "I give my life for you." And if the money is spent uselessly, bringing no adequate return either in comfort or in pleasure, he is aware that his life is being thrown away. The rich, who have money for all things and are unable to realize its value, cannot understand these things. They do not know that money thrown away is some man's life thrown away. When they look at a foolish ornament on a woman's arm, they do not realize that they are seeing three months or a year of a man's life. Only a poor man or a sick one can see the life blood in money.—ROBERT QUILLEN, in Fountain Inn Tribune.

# Food Allergies in Digestive Disorders

By Anthony Bassler, M.D., New York City

Consulting Gastro-Enterologist St. Vincent's, St. John's, People's, Christ's, St. Agnes', Jewish Memorial and Doctors' Hospitals, New York

ANYONE who has lived in a special field of medicine during the last thirty years and observed new things, like telegraph poles passing a car window to the rear, often wonders how large must be the graveyard of seeming advances. In no field of interest can this cemetery be more crowded than in gastro-enteric affairs. There was the time when interest concerning a stomach tube, not only constituted such a person a "stomach specialist," but the analysis of test meals was employed and depended upon to make diagnoses of practically all digestive disorders. Today, the modern specialist uses and depends upon test meals but very little. The advent of the x-rays in diagnoses came on at about the same time as safe abdominal surgery. While both are prominently still with us and justifiably will be for ever, they nevertheless have long ago proved that there are many digestive disorders and diseases not possible of diagnosis by them.

What has become of the epochs of great interest in the milk, starvation, purgation, rest, the meat and water Salisbury diet and the vegetarian cures? What has become of the *B. bulgaricus*, *yogurt*, and now the rapidly fading *B. acidophilus* milks and cultures? And all that long epoch of the endocrines and neuropsychiatry attitudes, still going strong in explanations and interests with many? Observe the failing of broad interest in fractional test meals, the diagnoses of gall-bladder states with the duodenal tube and medical biliary drainages, the still too-strongly-held and depended upon colonic irrigations, the Sansum dietetic plans and many others.

We can agree, even the most critical clinicians, that there is much of value in any and all of these things which, today and for all days in the future, will stand as cardinal in medicine. But what is of interest is that, at the times that these were advanced, they were spread so generally over the work of gastroenteric disorders that even the specialists in the field were broadly applied advocates of

them, only, in large part, to change to something else in a few years.

Advances are made by two types of men: the calm, plodding and controlled type, and the enthusiast. The work of the first is usually modestly offered, quickly forgotten and usually rediscovered years afterward. That of the enthusiast spreads fast, is applied beyond its significance, and a small blanket is pulled to spread so thin that it largely crumbles away, leaving only shreds of permanency.

Beginning at the first supplying of soluble proteins to the profession by the Arlington Chemical Co., in June, 1916, and the pioneer work of Dr. Oscar M. Schloss, professor of pediatrics, Cornell Medical School, there followed the first edition in French of the work of Laroche, C. Richet (fils) and Saint Girons, on alimentary anaphylaxis, in 1919. Since these there has spread an ever-widening interest in this subject. Many articles, text books, etc. have been written on it, mainly in the last twelve years, and now the significance of the subject in bronchial asthma, urticaria, hay-fever, etc. is carried throughout all fields of medicine and recently most definitely into gastroenterologic affairs. From canker sores to proctitis, we now have food allergic factors in etiology of total production in many conditions like coated tongue, heavy breath, gastric distention, belching, sour stomach, pyrosis, nausea, anorexia, globus hystericus, nervousness, biliousness (whatever that is), pain in the upper right abdominal quadrant, constipation, ulcer type of pain, general abdominal pain, abdominal cramps, diarrhea, intestinal gas, appendix type of pain, mucous colitis, colonic pain, vomiting, proctitis, pruritus ani and others.

## DIET AND ALLERGY

I started, in February, 1918, with the idea of establishing diets for my gastroenteric cases on an allergic basis, in so far as it was possible. Beginning in 1919 and for three steady years, all patients that

came under my observation, in which it seemed at all warranted, had a complete series of skin tests, records were made and diets arranged on histories and findings in 801 cases. In these there were 327 instances in which one or more plus-positive reactions to some foods were obtained. Of these it was a single food in 64; one to three in 203; three to six in 43; and in 17 it was beyond six in number. Those of wheat, eggs and milk were by far the most numerous, spinach being most common of the vegetables, meats and fish less so, and nuts the least of all.

As time went on it was proved that there were many instances of people who, clinically, were definitely poisoned by certain foods, in whom the skin tests were negative; so many positive skin tests in which even the abundant eating of these foods seemingly made no difference to the individual; and so many poor and indifferent results in symptom relief from eliminative dieting, that I lost most of my interest in this method of diet construction as a procedure. That there were striking and definite results here and there was unquestioned, but these were too few to persist with this basis of diet make-up as a general plan, considering the large amount of time consumed in the work (practically three hours to each patient), the expense of three nurses steadily engaged at it (which was costly to patients), not to figure the time of myself and my associates.

The idea is now being advanced by advocates of this method of diet construction, that it is of great importance for clinical benefits; that this method of diet construction in clinical medicine is most important to carry out in a wide range of gastroenteric conditions; and that gastroenterologists should seek the assistance of allergic specialists in dieting their cases. This brings the work of the allergist in the gastroenteric field under scrutiny and analysis as to whether he and his work are worth while, to what extent, and whether the clinician can or cannot handle the whole subject quite as well as the allergist can.

There is a rationale—a common sense standard—among all good clinicians, and limitations of time which patients allow us for studies and the accomplishment of benefits. The allergists tell us that many of these patients require a year of observation,

with changes of diet, to accomplish results; but in such lengths of time the vast majority of all digestive cases improve, in spite of any types of treatment and irrespective of any forms of dieting. We are told that in only 50 percent of food allergic cases are the skin tests positive; that they may be positive today and negative tomorrow; that one may have certain positives now, and in a few months almost opposite ones.

All of the allergists' work is based on specific allergic effects on trivial amounts of foods, when it is a well known fact than in considerable amounts of food is contained the far more important item of upset from foods. We are told that one should try elimination diets Nos. 1, 2 and 3 and more, over weeks and months of time, and should try one after another, if the former ones employed are not successful; that a dislike for and a disagreeable symptoms from specific foods are due to allergy, in large part; that food allergies are inherited in 60 percent of instances; that benefit coming from fasting, physics, colonic irrigations and enemas "is always suggestive that food allergy may be present," etc.

#### BACTERIOLOGY AND CHEMISTRY OF THE INTESTINE

While the allergists advocate the importance of careful history taking, complete examination of patients and the clinical evaluation of the findings, there is one type of examination they do not engage in—a type that, not only assails most of their beliefs and limits their teachings, but one which, until employed in the food allergy subject, severely limits most of its significance in clinical medicine and gastroenterology. For the proper understanding and estimation of food allergies, biologic studies of the bacteria and chemistry of the intestinal canal are absolutely essential.

That a patient improves on this or that type of food-allergic elimination diet does not always prove that this or that type of specific protein is responsible for his symptoms. There is no more definite thing in medicine than the development of food intolerances on changed bacterial or chemical states in the intestine. Added to this are the allergies due to intestinal bacterial products, which bacteria are influenced for weal or woe according to the foods taken, upon which these bacteria exist and multiply. These

are overlooked in the food allergy work of today. Added to these are the food-bacterial products, often toxic in themselves; and the bacteria also may be toxic, irrespective of this or that food protein, and capable of making this or that protein allergic to that individual.

While the application of food allergies in a diagnostic and therapeutic sense may be satisfactory or a short shift to some clinicians, largely it is only touching the subject and, until proper biologic work is done, both diagnostically and therapeutically, it will always fall far short of the requirements. There are, here and there, easily-determined instances of specific food allergies. One needs but to ask questions regarding food intolerances, in order to identify most of them. Usually the patients can tell you promptly that clams, strawberries, fish, wheat, eggs, milk, etc. cause illness or disagrees with them and this often is an instance of specific food allergy. One needs no skin tests here. But, in the absence of such definite information, questions arise, and the vast majority of the questions are not cleared up by skin tests nor elimination diets.

It may satisfy the allergist, after a complete history is taken and physical examinations made, to make blood counts; Wassermann tests; urine analyses; roentgen-ray studies of sinuses, chest, gastrointestinal tract, colon and gall-bladder; gastric analysis; studies of stools for parasites; estimations of blood sugar, icteric index, Van den Berg reactions and phenol-sulphonephthalein kidney function tests; metabolic rate estimations; and electrocardiographic tracings. But, until complete bacteriologic studies of the intestinal contents, under definite diets, and of the various pathogenic, zymogenic and saprophytic organisms are made, no food allergic work is of much value; and this is so, not only in gastroenteric conditions, but in the whole field of food allergies throughout medicine.

When such bacterial studies are engaged in, it is surprising how little there is to the subject of specific food allergies. So definite was this in my experience that, after several years of arranging diets on the basis of lack of desire or aversion for certain foods, the definite statements of patients as to the ill effects of certain foods and the findings of skin testings

and dermal tests, I have given up the whole basic idea of food allergic significance in any broad sense. Of course the lack of desire, aversion and definite poisoning should be paid attention to in dietetic advice. This is simple to accomplish and practically always an individual can get along satisfactorily without a few special foods.

It is my belief that the skin tests should be engaged in here and there, especially in that group of disorders in the past or present history which, today, are considered definitely allergic, and eliminations made when the tests are positive and their numbers are not too numerous among important foods. Unless, however, the history against this or that food is definite or the skin test strikingly positive, I no longer pay any attention to the specific food allergic idea in diet construction. Articles giving positive skin reactions, when they are of foods that the patient rarely or never eats, does not require or can get along just as well without, might occasionally be eliminated. But when there are only slight reactions, or even when these are definitely positive to foods important for nutrition or are numerous, no attention is paid to them unless, perhaps, they be wheat, eggs, milk or spinach, and then a very critical attitude is taken and often they are temporized with for a while. Only when sensitiveness is shown in the history and in skin tests is attention paid to that fact, and then not always by total elimination.

Whenever the history or the results of the skin tests is suggestive, I make biologic studies of the intestinal bacteria and chemistry and, with very few exceptions (and then only in slight modifications), the diet is arranged according to these. Since this policy of dietetic control became the order of procedure, the results are far more satisfactory than when the diets were arranged on the food-allergy basis. Not only is this true of clinical benefits accomplished, but many of the apparent food allergies disappeared. As a result of my experience with both methods—the food-allergic elimination diets and diets based on the bacteria and chemistry of the gut—it is my fixed belief that the food allergists have made no contribution to gastroenterology and a most questionable one to that large part of medicine in which the allergic ideas are now being spread. In these, of course, we may agree with

them in a liberal part in the well known allergic disorders, such as hay-fever, urticaria, eczema, allergic migraine, bronchitis, asthma, etc.

Some of the allergy work of late years is a real contribution—interesting but circumscribed in application and significance. As clinicians, we should not allow food-allergic doctrines to become the style or the fad, only to back down again as we have done so many times in the past. No fad takes hold with the public and spreads as fast as those pertaining to the gastrointestinal tract. For this reason, no matters connected with diseases and disorders of

this tract should have other than the closest scrutiny by the profession, and in this scrutiny food allergies in the production of gastroenteric conditions have, in my experience, only a limited application. As a procedure it answers better than none at all, because some benefits are accomplishable; but as a complete standard in clinical medicine, as some of the allergists would like us to believe, one needs to do only a fair quality of biologic work on the intestine and only moderate numbers of biologic therapeutic tests to disprove much that, today, is being looked upon as important.

784 Park Avenue.

---

## The Laurence-Biedl Syndrome

### A Report of Three New Cases

By James H. Hutton, M.D., Chicago

THE Laurence-Biedl Syndrome, with only thirty-eight cases reported since 1866, would seem at first glance, to be of such low incidence as to warrant only scant attention from the medical profession generally, in the face of the many more pressing problems with which it is confronted. Further consideration, however, suggests that, since endocrinology, as a department of medicine, is still in its frontier stages, material which may have any possible evidential value, now or later, should be put into immediate circulation in permanent form. Furthermore, familiarity on the part of the profession with the classic examples of this or other rare syndromes will aid in the recognition and probably correction of the vaguer and less clearly marked cases, of which, observation shows, there are many. Indeed, the increasing frequency with which cases have been published in the last few years, coinciding with the rise and spread of endocrine knowledge generally, indicates that this end is in a fair way toward achievement.

It is on this basis that the following report of three new cases of the Laurence-Biedl Syndrome is published, together with various ideas and comparisons arising from the study of the literature. The children involved are the only three children of apparently normal American parents, two boys, 14 and 10 years old, and a girl of 12. They were referred to my office in Sep-

tember, 1930, by Dr. Gerald M. Cline, of Bloomington, Ill. for "glandular therapy."

#### THE TYPICAL SYNDROME AND ITS HISTORY

Five general elements go to make up the typical Laurence-Biedl picture: Obesity, congenital malformation, skull deformity, subnormal mentality and intestinal disturbance. More specifically, there may be genital dystrophy of various sorts; polydactylism; atypical retinitis pigmentosa, nystagmus, night blindness, atrophy of the optic nerve or other visual defects; functional or organic atresia ani; and faulty muscular or skeletal development, with resultant imperfection of gait or posture. My three patients, in general, showed the genital dystrophy, obesity, visual defects, faulty gait and posture and polydactylism.

Horing, in 1864, and Wecker and Stor, in 1865, had coupled in a single case pigmentary retinal degeneration and polydactylism, but in 1866 Laurence and Moon laid down the lines of future progress with a report of four of a family of eight children who showed retinitis, adiposity, genital dystrophy and deficient mentality, with three also having defective gait. This classification of manifestations as a clinical entity remained, except for a few additional reports, until 1920, when Bardet reopened the subject with another case. Endocrine study was beginning to make real advances about that time and cases



rapidly multiplied. In 1922 Biedl and Raab reported another case of quadruple incidence among eight children of one family and, in 1925, Solis-Cohen and Weiss added another. In 1929 Beck<sup>1</sup> reported two cases in one family of four children.

Even so, Beck was able to uncover only thirty-five cases, including his own, since Horing wrote. Lisser,<sup>2</sup> a little later, posted a thirty-sixth case, and McCrae<sup>3</sup> and Turner<sup>4</sup> each added one more in 1931. The present three, accepting Beck's figure, bring the total so far discovered to forty-one.

Beck, incidental to his report, has summarized the literature of the Laurence-Biedl Syndrome in thorough and excellent fashion and his observations are taken herein as a convenient basis for discussion.

As a rule, more than one child is affected in a family. Beck found only eight families in which only one child was so affected. Turner reports a case in which only one child was involved and the case reported by McCrae and Weiss seems to fall in the same category. So that, in the entire history of this condition, only ten families have been found which were so fortunate as to have only one child suffering from this condition.

In most of the multiple cases, exactly half the children of the family seem to have been stricken—in three of them two sons and two daughters of eight children, and in another the second, fourth, sixth and eighth. My three cases seem unique, therefore, in that there are no normal offspring of these parents, though it is, of course, futile to speculate on their future possibilities. It should be noted, too, that many of the single cases (Lisser's, for instance) contain mention of brothers or sisters with polydactylism who died in infancy.

#### FAMILY HISTORY

Although they note the uncles or other kin with polydactylism, McCrae and Beck both take the trouble to record their belief that there is no ground for considering this condition hereditary. Obviously; the typical genital dystrophy of the syndrome would, by its very nature, effectively rule out the possibility of transmission in the direct line. The evidence suggests, however, the idea that a background of endocrine dysfunction is the transmissible element and forms a sort of culture medium in which this syndrome comes to full bloom.

Parents themselves seem to offer little more than indications in the way of evidence. The mother of my patients presents, in stature and appearance, a possibility of anterior lobe pituitary deficiency. So does the father, in less degree. The paternal grandfather was reported as short and the grandmother as tall and heavy, also suggesting pituitary influence. Beck's cases were the children of a mother four feet eleven inches tall and weighing eighty-eight pounds, markedly asthenic and probably a case of anterior lobe hypopituitarism, with a father five feet four inches tall, weighing 160-170 pounds and probably suffering from a bilobar pituitary deficiency. McCrae's patient's father was below average mentally, showed arteriosclerosis and myocardial changes and later committed suicide.

Data as to nationality are so scanty as not to warrant discussion. Some day, however, it is possible that a coordination may be worked out between the nationality ratio of the Laurence-Biedl cases and the prevalence of syphilis and other infectious diseases in various European countries two or four generations ago.

Beck found some cases involving consanguinity in the records, but the parents of my patients report inability to find anything in their family histories to indicate blood relationship.

Beck said dentition was normal in both his cases, as did Lisser and McCrae and none makes any mention of dental abnormalities from the literature. On the other hand, the older boy in the present series developed his first teeth at two months, while in the others, teeth erupted at three to four months. This abnormally early dentition is frequently found in the histories of hypopituitary patients.

#### EATING HABITS AND FAT

The older boy of my cases, his mother reported, frequently developed "canker sores" after eating too much meat or sugar and the younger boy frequently had spontaneous nosebleeds. Both these tendencies are also common in cases of hypopituitarism, in my experience.

Beck mentions in passing that one of his cases had "always had a good appetite" and "ate four or five slices of bread with each meal and was very fond of spaghetti, potatoes, and sweets." His second case, sister of the first, had a "craving for

sweets." McCrae noted a "newly-developed liking for sweets" in his patient after eleven weeks' treatment with thyroid. I find in the material at hand, including Beck's summary, no other reference to appetite. In the older boy and girl of my cases, however, the mother reported "enormous" appetites, with special emphasis on the older boy's love for sweets. This characteristic will immediately recall the high sugar (galactose) tolerance of pituitary hypofunction and the yearning for carbohydrates that is frequently a concomitant phenomenon. Solis-Cohen and Weiss, however, reported (1925) no exceptional sugar tolerance in their cases.

Distribution of adipose tissue in all three of my cases was distinctly of the pituitary type. Beck considered the obesity in his case of general distribution, noting, however, that the mons of the boy was very large and his breasts of feminine type. He also records that obesity, with hypogonadism of the Frölich type, occurs in "almost all of the cases." Lissner called the obesity in his case of pituitary distribution, while McCrae writes that the fat of his patient was distributed "fairly generally," but the picture accompanying his article shows the patient's buttocks to be huge, with extraordinarily large supra-trochanteric pads and large abdomen and mons.

Mental states among recorded patients, Beck says, run the whole gamut from slowness or delinquency to moderate imbecility, though there is question as to how much of this, especially the milder states, is due rather to the defective vision than to real mental lack. My cases showed average mental ability, making all allowances.

Laboratory findings are usually negative, as Beck points out, except that the few basal metabolic rates recorded ranged from minus 2 to minus 29 percent.

X-ray studies of the sella turcica are likewise practically negative. The sellas are ordinarily small and occasionally flattened or irregular in contour.

Polydactylism is practically always present and may range from one extra digit to one on each extremity. Webbing of the digits is sometimes found.

The "waddling gait" seems to be likewise a constant.

#### VISUAL DEFECTS

The usual visual defects in these cases constitute another element that points

toward hypopituitarism. It is a commonplace of endocrine diagnosis that transient or progressive disturbances may be noted in such deficiencies, especially of the posterior lobe. Laurence and Rowe, for instance, report yellow discs in the retinas of half their pituitary cases, with enlargement of the blind spot and contraction of the form and color fields also frequent.

Beck, summarizing, cites visual troubles as a constant of this syndrome, specifying night blindness, nystagmus, sluggishly-reacting pupils, contraction of the visual fields, atrophy of the optic nerve and abnormal retinal pigmentation. In his own cases, he found partly-atrophied nerves, small veins and arteries, atypical spots of pigment in both retinas and night blindness. Lissner's case was described by ophthalmologists as showing retinitis with retinal atrophy, "sharing features of atypical retinitis pigmentosa and a closely associated type, *retinitis punctata albicans*." McCrae describes his as showing "partial paralysis of each external rectus and retinitis pigmentosa," with a convergent squint and lateral nystagmus; her palpebral fissures were narrowed by obesity and it was not possible to determine the visual fields. Turner says there was no retinal change in his case.

All three of my patients showed night blindness as soon as they were old enough to go out at night, their mother said. Vision, in order of age, was respectively one-third, one-fourth and three-fourths normal. Dr. Norman Elliott, of Bloomington, who examined the children's eyes some months before I saw them, reported a pigmented retinal condition; but Dr. Robert Blue gave as his opinion that the eyes did not show the usual atypical retinitis pigmentosa, but "a congenital and stationary condition." Dr. Blue said the children were all totally color-blind on the Ishihara chart. He charted the visual fields of the elder children, with difficulty—they showed some contraction—but was unable to examine the youngest. He also reported some atrophy of the optic nerve.

Later a report from the State Hospital, to which the children were eventually taken, was made available to me through Dr. Elliott. The opinion expressed was that the children "all had retinitis pigmentosa without pigment, with little optic atrophy and a considerable atrophy of the retina." This condition was considered

progressive, with blindness ultimate and inevitable.

#### ETIOLOGY

Speculation varies widely as to the etiology of this remarkable condition, though it seems generally agreed that it is of endocrine character.

McCrae refers to writers who believe that there are two forms of this syndrome: One due to pituitary disturbance; the other due to changes of cerebral origin in the central nervous system, probably some lack of development. With a history, in his own patient, of normal infancy and a virulent attack of acute, probably meningeal, infection at four years, he suggests that the condition is due to cerebral and glandular damage wrought by the infection, on an organism of obviously poor material with a congenital lack, evidenced in the polydactylism.

Bardet looked toward a lesion of the fetal or embryonic hypophysis for an explanation.

Solis-Cohen and Weiss, quoted by Lissner, reserved their opinions pending research as to congenital pituitary deficiency or congenital defect of trophic centers in the hypothalamus.

Lissner says he "has no original theories as to the etiology of this bizarre symptom complex."

Beck, citing Biedl's and Bardet's theories, offers no suggestion of his own, but remarks that this syndrome "bears a close resemblance to congenital malformations occurring in achondroplasia, mongolian idiocy, dysostosis cleidocranialis and congenital club-foot, which Mruk Jansen ascribes to increased amnion pressure due to an abnormally small amnion, the character of malformation depending on the period of embryonic life during which the pressure was exerted."

Hydrocephalus, Beck found, was also mentioned as an etiologic factor, but, he adds, few, if any, patients offer direct evidence of the co-existence of this condition.

Turner says that, due to the constant presence of the Frölich Syndrome and the frequency of mental retardation, "it seems logical to consider this condition one of hypophyseal dyscrasia, with a secondary thyroid deficiency."

Biedl's opinion centered about the secretion of the pituitary pars media and its effect on metabolic and genitotrophic centers in

the mid-brain, McCrae writes. This offers three possibilities, he points out: Defect or disease in the pars media; obstruction; defect or disease of the central centers.

It seems to me that Biedl's general statement sums up and includes the other explanations suggested. Either there is hypothalamic injury (hydrocephalus, amnion pressure, trauma, infection, etc.) inhibiting pituitary secretion, or this secretion is not reaching the parts it should reach, or else the parts themselves are not able to utilize it. That is obvious. The need is to go beyond this general statement to the underlying facts, whether they be congenital defect, prenatal injury or later trauma or infection, or all of them.

It is logical and probably true that there are three forms of this syndrome, according to the endocrine element involved—production, transmission or utilization. The facts that some cases improve under glandular therapy and others do not, seem to justify that statement. The varying combinations of symptoms—some showing mental retardation, some not; some with malformed skulls, some with normal ones; some with intestinal disturbance, some without—also argue that there is a least common divisor in this syndrome which has not yet been established. When we know more about the mechanics of the endocrine system, this question will probably be easily solved.

So far, however, we can consider the possibilities only from a speculative standpoint. We could assume a maternal traumatic or congenital malformation, precluding development of the embryonic pituitary and thyroid center, for instance; but why should such a defect affect only and exactly half the children of several families? We could consider an injury, in utero, of some sort, too; but why should such an injury befall the second, fourth, sixth and eighth children of one family? Possibly, in these cases, there is an ancestral history of infection (syphilis, for instance) or of trauma, resulting in a heritage of pituitary imperfection. Possibly a combination of two blood lines carrying such a taint is required to produce the syndrome in its classical form, in which case the laws of heredity might explain the peculiar incidence. This could of course take any one of the three forms mentioned above.

These statements are written down here with all caution, not as an explanation of

the etiology of this syndrome, but as an illustration of what may turn out to be the type of the explanation. Such an etiology would certainly be difficult to prove, but the polydactylism and the involvement of both pituitary and thyroid, which we know are of allied embryonic origin, are hardly susceptible of explanation except on some such basis. McCrae's case, for instance, apparently normal up to the age of four and showing great improvement under organotherapy, could conceivably have been due to the meningeal infection at four—were it not for the polydactylism.

#### TREATMENT

Reports of results of various therapeutic formulae vary.

Two cases reported by Biedl showed improvement under pituitary and thyroid medication.

Barnhardt's two boys were benefited with thyroid, pituitary (anterior lobe) and calcium.

De Cyon found his three boys responding favorably to hypophyseal extract. Two of De Schweinitz's three cases also reacted favorably, one showing improvement, the other arrest of degenerative processes.

Beck's two cases improved considerably under thyroid and anterior lobe pituitary treatment, results manifesting themselves in a week. Under a long course of treatment, school work was much better, weight decreased, genitals developed, the patients were brighter and more cheerful, they began to dress and care for themselves, their skins were much softer, one's gait became normal and the other's improved. The girl, however, developed a number of pairs of small black spots on her face, neck and arms, recalling Addison's disease. Improvement in both cases continued after treatment was stopped.

McCrae began treatment with two grains of whole pituitary and one grain of thyroid, thrice daily. A menstrual period ensued in eight days. In two weeks the pituitary was discontinued and thyroid alone—from one to five grains daily—was given. Under this treatment and a diet of 1,500 to 1,600 calories a day, she lost thirty-eight pounds and her mental state improved surprisingly. McCrae, however, believed that she needed more pituitary. This patient is the one who developed a liking for sweets as her condition improved, which seems to be an indication of the uncorrected pituitary deficiency.

On the other hand Bardet, Bartoletti and Solis-Cohen reported no improvement in their cases under endocrine therapy. Lisser apparently made no effort at treatment.

Turner's case was given thyroid in doses of about 25 grains a day, antuitrin in doses of 1.0 cc. daily and pituitrin, 40 minims daily. There was considerable improvement in his general condition and his intelligence quotient advanced from 50 to 76.

For economic reasons, my three cases were rather indifferently treated on their return home and the results were disappointing. What change there was, was for the better. They were given thyroid in small doses and whole pituitary by mouth, with no hypodermic ministrations.

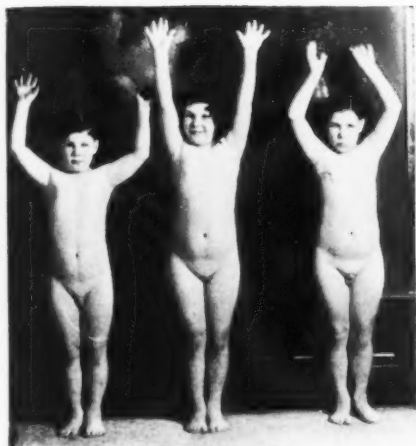
The older boy, with a basal metabolic rate of minus 20.8 percent at the first examination, showed a normal figure eight months later; his posture, vision and genitalia were unchanged; the abdomen was less prominent. The neutrophile count increased from 35 to 54; lymphocytes dropped from 58 to 45 and the mononuclear count dropped from 4 to 1. The girl's BMR changed from minus 6 to plus 2 percent and the neutrophiles increased from 47 to 64, the lymphocytes dropped from 50 to 29 and the mononuclears increased from 2 to 7. The girl had grown a little more than the boys and was the tallest at the second examination. In the younger boy the BMR changed from plus 2 to minus 26 percent. The neutrophiles went from 44 to 55, the lymphocytes from 52 to 40 and the mononuclears from 3 to 4.

More recent reports from the parents indicate that there is little change since the second examination. The younger boy seems to have the greatest promise, is least affected, and the father was thinking of putting the others in a State home for the blind, to permit concentration of the mother's care and the family's financial resources on the youngest. I have since been informed, however, that all three have been sent to the Illinois State Hospital at Jacksonville.

#### CASE REPORTS

Details of my three cases follow, with facts pertinent to all given first:

**Family History:** The parents are of Scotch-Irish and English-German origin. Father says check of family trees reveals no evidence of consanguinity. Parents' health reported as "low." Each child was born in a precipitate, spontaneous delivery after very short labor and each weighed eight pounds at birth and appeared normal



Patients mentioned in the Report.

except for polydactylism. There was no history of polydactylism on either side of the family. Reports of eye examinations, approximately the same in each case, have already been presented. The complaints in each case were obesity and poor vision.

#### Harold C., Age 14

**History:** Born with an extra digit on each extremity; all were removed at birth; also circumcised at birth. First teeth appeared at two months. Sat up at six months; walked at 18 months and was slow to talk. Breast-fed one year. Broken of bed-wetting at 18 months. Had measles and whooping-cough "very hard" at five years; chicken-pox, light, at six years. Tonsils and adenoids removed at six years, and he was vaccinated for small-pox. Appetite is "enormous," particularly for sweets. He is constipated. Night blindness was noted when he became able to walk around. Develops "canker sores" after eating too much meat or sugar. Shows average progress for his age in school and is "prone to be a bookworm." His vision is most affected of the three. Lack of interest in affairs requiring good sight was noted.

**Physical Examination.** Sept. 6, 1930: Patient over-weight. Body build of feminine type, with shoulders and hips rounded and hips much wider than shoulders. Skin and its appendages normal. Crown of head high and cheeks prominent. Palpebral fissures narrowed. Abdomen of pituitary type; chest poorly developed; obesity of bilobar pituitary type. Breasts quite markedly developed. Distal end of penis bulbous, with proximal end much contracted and the skin thrown into a fold around the base. Testes small. Pelvis broad. Scars where supernumerary digits were removed. Patient stutters and emits peculiar grumbles while talking.

**Laboratory examinations:** Temperature, 97.6° F; pulse, 75; weight, 85½ pounds; height, 53½ inches.

**Blood,** Sept. 6, 1930: Hemoglobin, 70 percent; red blood cells, 5,250,000; leukocytes, 9,300; neutrophils, 72; lymphocytes, 20; large

mononuclears, 4; eosinophiles, 2; basiphiles, 2 percent.

**Urine,** Sept. 19, 1930: 475 cc. in 24 hours; negative chemically and microscopically. Tolerated thirty grams of galactose without glycosuria.

**Röntgenologist's Report:** Picture of sella turcica showed "bone of normal character. Sella of normal size and shape."

**Basal Metabolic Rate:** Minus 20.8 percent.

**Physical Examination,** June 2, 1931: Posture, vision and genitalia unchanged; abdomen much less prominent; school work unchanged; father reports much uncontrollable nervous twitching.

**Laboratory Examinations,** June 2, 1931: **Blood Chemistry:** Non-protein nitrogen, 43.2 percent; urea nitrogen, 18.9; uric acid, 2.6; creatinin, mgm. 0.3 per 100 cc.; Wassermann and Kahn tests, negative.

**Pulse,** 84; respirations, 26; height, 53½ inches; weight 86½ pounds.

**Blood:** red cells, 4,890,000; leukocytes, 6,850; hemoglobin, 75-80 percent; lymphocytes, 45; mononuclears, 1 percent.

**Urine:** increased to 1,420 cc. in 24 hours; negative, chemically and microscopically.

**Basal Metabolic Rate:** Normal.

#### Jeanne C., Age 12.

**History:** Born with one extra finger and one extra toe. Sat up early; was slow to walk and talk. Breast-fed to seven months, then failed to gain weight for six months. First tooth at three months. Had one convulsion at about one year. Extra digits removed at eight months. Weight normal up to two years, thence much over-weight. Broken of bed-wetting at average age. Had chicken-pox lightly; whooping-cough "very hard." Appetite "enormous." Bowels regular. Small-pox vaccination failed.

**Physical examination** Sept. 19, 1930: Much over-weight; obesity of pituitary type. Hair on head heavy and fine; skin rough; nails brittle; teeth even and regular, apparently of good quality; otherwise negative.

**Laboratory examinations:** Temperature, 97.4° F.; pulse, 80; weight 76½ pounds; height 53¼ inches.

**Blood,** Sept. 6, 1930: Hemoglobin, 70 percent; RBC, 4,990,000; leukocytes, 11,300; neutrophils, 69; lymphocytes, 18; large mononuclears, 10; normoblasts, 3 percent.

**Blood chemistry:** Non-protein nitrogen, 37.3; uric acid, 2.63; sugar, 85 mgm. per 100 cc.

**Urine,** Sept. 19, 1930: 825 cc. in 24 hours; negative otherwise; galactose tolerance, 30 grams.

**X-rays** show "sella possibly slightly larger than usual, but within normal range."

**Basal Metabolic Rate:** minus 6 percent.

**Physical examination,** June 2, 1931: Jeanne shows more growth than either of her brothers and is now tallest. Posture is fair. General findings, unchanged.

**Laboratory,** June 2, 1931: Pulse, 78; respirations, 40; height, 54½ inches; weight, 88 pounds.

**Blood:** Hemoglobin, 80 percent; RBC, 5,050,000; WBC, 8,350; neutrophils, 64; lymphocytes, 29, mononuclears, 7 percent.

**Urine:** 24-hours quantity increased to 1,600 cc.; negative.

**Basal metabolic rate:** Plus 2 percent.



## Billie C., Age 10.

**History:** Born with one extra toe, which was removed at seven months. Breast-fed to one year. Sat up and walked at normal age; slow to talk; first tooth at three months. Broken of bed-wetting at normal age. Whooping-cough and measles at 3 years; chicken-pox at 4, pneumonia "very bad" at 5 years. Night blindness less noticeable than in the others. Most active of the three. Mind apparently not subnormal for his age. Inclined to spontaneous nose-bleeds occasionally at night (coagulation time, 3 minutes).

**Physical examination,** Sept. 5, 1930: High, oval head and prominent cheeks; narrowed palpebral fissures; shoulders round and body generally of feminine type; penis contracted at proximal and bulbous at distal end, as brother's; testes normal; hands of chubby, spade type—tips of fingers almost contingent to line. Obesity of pituitary type.

**Laboratory examinations:** Temperature, 98.2° F; weight, 64½ pounds; height, 49½ inches.

**Roentgen-ray Pictures** show sella of "normal size and type."

**Blood,** Sept. 22, 1930: Hemoglobin, 87 percent; RBC, 4,700,000; WBC, 8,200; neutrophils, 44; lymphocytes, 52; mononuclears, 3 percent. No abnormality noted. Wassermann and Kahn tests, negative.

**Blood chemistry:** Total NPN, 40; urea nitrogen, 16.6; uric acid, 3.25; creatinin, 0.96 mgm. per 100 cc.

**Urine,** Sept. 19, 1930: 420 cc. in 24 hours; negative.

**Basal metabolic rate:** minus 2 percent.

**Nose and throat cultures** negative for Klebs-Löffler bacilli.

**Laboratory,** June 2, 1931: Pulse, 76; height, 53 inches; weight, 72 pounds.

**Basal metabolic rate:** minus 26 percent.

**Blood:** Hemoglobin, 75-80 percent; RBC, 4,760,000; WBC, 9,200; neutrophils, 55, lymphocytes, 40; mononuclears, 4; eosinophiles, 1 percent.

**Urine:** 24-hour quantity increased to 1,480 cc.; negative.

No change in genitalia; posture fair; plays better; vision improved; school work unchanged.

## BIBLIOGRAPHY

- 1.—Beck, Harvey, G.: The Laurence-Biedl Syndrome; Reports of Two Cases In One Family; Results Of Treatment. *Endocrinology*, Vol. 13, No. 4, p. 375-387.
  - 2.—Lüsser, H.: Dystrophia Adiposogenitalis with Atypical Retinitis Pigmentosa, Mental Deficiency and Polydactylism. (The Laurence-Biedl Moon Syndrome) Report of a case. *Endocrinology*, Vol. 13, No. 6, pp. 533-536.
  - 3.—McCrae, Thomas and Weiss, Edward: Laurence-Biedl Syndrome. *Med. Clin. of N. Am.*, Vol. 14, No. 4, pp. 825-833.
  - 4.—Turner, Henry: *Endocrine Clinic*. J. Okla. State M. A., May, 1931, Vol. 24, pp. 148-155.
- Lawrence, C. H. and Rowe, Allan Winter: Studies Of The Endocrine Glands. *Endocrinology*, Vol. 13, No. 3, pp.245-322.
- 30 N. Michigan Ave.

## The Diagnostic Value of the von Pirquet Test

By George N. Gaboury, A.B., M.D., Springfield, Mass.

THE skin test for the detection of active tuberculosis, perfected by von Pirquet, of Vienna, in 1907, has been used so little, by the large proportion of practitioners, that its value as a diagnostic procedure is little or not at all understood. In view of the recent activities of the state departments of health in this field, it would seem desirable to have at hand a concise statement of the why's and wherefores of that test, in order that the practitioner may use it with intelligence.

## TUBERCULIN

The test, in its present form, is the result of a discovery, by von Pirquet, that the skin reacts in a characteristic manner after vaccination with Koch's tuberculin. In 1890, Koch prepared what he called tuberculin and erroneously attributed to it curative properties. It is an extract of a glycerin-bouillon culture of the tubercle bacillus, at least six weeks old, which has been sterilized in the autoclave and then

concentrated in a water bath to one tenth its volume. So prepared, tuberculin is a syrupy liquid, containing many dead tubercle bacilli.

When this fluid is injected into a healthy person or animal, it produces no reaction, either general or local. However, when it is injected hypodermically, even in small doses, in a patient having tuberculosis in any of its forms, there appears, within 48 hours, a marked elevation of temperature, which continues for about 12 hours. Moreover, there is a very lively reaction at the tuberculous focus. Thus, if there was a tuberculous nodule at the apex of a lung, one would observe an exacerbation of the cough, increased expectoration and more numerous rales—Koch interpreted this reaction as a necessary method of eliminating a tuberculous focus, preparatory to subsequent cicatrization. It is really the beginning of an aggravation of the disease.

As a means of treatment, tuberculin was

soon abandoned, but continued to be used by veterinarians as a means of diagnosis. The subcutaneous injection of tuberculin in man, for diagnostic purposes, was also tried, but there were so many disadvantages that it was discontinued. It is manifest that, if the test is to be of any value, the patient must be free from fever at the time of the injection. Moreover, it is necessary to use doses large enough to provoke a reaction that is not doubtful. Such doses often light up a disease that was in a quiescent stage. For these reasons, the use of tuberculin has been almost entirely abandoned in medical practice.

In 1907, von Pirquet, in the light of what he had observed in his researches on anaphylaxis, conceived the idea of testing the effect of a drop of tuberculin on a denuded surface, as suggested by what he observed in the use of smallpox vaccine, and in this way perfected the test which bears his name.

#### TECHNIC OF TEST

The technic of the test is very easy. A skin area is chosen (preferably over the deltoid muscle) which is clear and free from any dermatologic lesions whatsoever. After cleansing with some mild antiseptic, two small scarifications are performed, about one-quarter inch in length, one above the other and about three-quarters inch apart. As in smallpox vaccinations, the epidermis should be eroded just sufficiently to reach the dermis. On the lower scarification a drop of tuberculin is deposited; the upper one serves as a control. After drying, the arm is bandaged and the patient is advised to return in forty-eight hours for examination.

If the patient harbors no live tubercle bacilli, the two scarifications will be exactly alike when seen again. Both have healed, with a small scab much like an ordinary scratch. However, if the patient has, anywhere in his body, a live tubercle bacillus, even though it may not be active, a series of events will occur at the site of the tuberculin deposit. The day after the vaccination, the scarification has become a red papule, surrounded by an area of erythema and edema. The papule endures during the next day, but after that the edema and the erythema begin to subside, the papule pales and is less salient and, in subsequent days, only a small red spot is left, which disappears without traces during the next week.

This local reaction is all that a positive von Pirquet test gives. There is no fever nor any focal reaction. Occasionally the lymph glands in the region of the vaccination are slightly congested, but this is very infrequent and, at best, transitory.

#### SIGNIFICANCE OF THE TEST

Everyone agrees, nowadays, that a positive von Pirquet test is proof that the patient harbors live tubercle bacilli within his body—in his lungs, in some lymphatic gland, or at the center of a tuberculous nodule that is clinically healed. It, alone, does not argue for an active tuberculous process.

In infancy there is no such thing as quiescent tuberculosis, and a positive von Pirquet test, in infants, is practically positive proof of active tuberculosis. After the second year, cases of quiescent tuberculosis begin to appear, and thereafter a positive test loses its clinical importance, in proportion to the age of the patient. When the patient has reached adolescence, it has no clinical significance whatsoever and many statistics have been published to show that from 90 to 98 percent of an adult, urban population will show a positive von Pirquet test, even in subjects who have never had clinical symptoms of tuberculosis.

In this connection it is interesting to understand the mechanism of the tuberculin skin reaction. If a von Pirquet test is performed with a tuberculin from which all the dead tubercle bacilli have been filtered out, the test is negative, even in subjects whose clinical symptoms leave no doubt that they have active tuberculosis. There is not even a formation of antibodies, as so often occurs with the vaccines. This necessity of the tubercle bacilli, even though dead, is explained by Erlich's theory. The tubercle bacillus plays the part of an antigen and causes the creation of antibodies; that is, of substances which can neutralize or modify the effect of the bacillus or its toxins.

It appears that, in cases of tuberculosis, more than one kind of anti-bodies results from the presence of the antigen. Some of these actually kill the antigen (tubercle bacillus or its toxins) and so are healing agents. However, there are other antibodies, called lysins, which convert the toxin of the tubercle bacillus into a toxin of a different nature. They act by dissolving the body of the dead tubercle bacilli,

and so liberate endotoxins. It is held that, when tuberculin containing dead bacilli is deposited on a scarification, the lysins circulating in the patient's blood or lymph dissolve these, with the liberation of endotoxins, and it is to these that the local reaction is due.

This theory has been invoked to explain variations in the intensity of the von Pirquet reactions. It has been held, for instance, that a strong von Pirquet reaction argues a plentiful supply of lysins, hence active tuberculosis. This view has not received unanimous assent. However, many hold that there is truth in it.

A negative von Pirquet reaction has very great significance, providing one can eliminate certain factors. The absence of a reaction to tuberculin means either that the patient carries no live tubercle bacilli within his body or has not the power to react to tuberculin—a status called anergy.

#### ANERGY

There are several circumstances which are known to produce a state of anergy. During the incubation stage of tuberculosis—a period which varies in duration between wide limits—there is a state of anergy. This so-called "anti-allergic" period has been found to be as short as 6 days in some cases, and to endure for 4 months in others. However, in the vast majority of cases, the incubation period varies from 20 to 30 days. Hence, if one suspects that an infant has been recently infected with tuberculosis, one should repeat the von Pirquet test after 4 weeks. If the second test is also negative, one may be fairly assured that the suspicion is unfounded.

A state of anergy appears also in various other circumstances. A previously positive von Pirquet test becomes negative in advanced tuberculosis with marked malnutrition; during menstruation, pregnancy and lactation; and during the progress of certain acute infections, such as measles, scarlet fever, pneumonia, influenza, etc.

However, as the von Pirquet test has significance in the first two years only, most of these causes for a state of anergy may be disregarded and one may conclude that the negative von Pirquet's reaction, at four-week intervals, gives very great assurance that the patient is free from tuberculosis.

#### CONCLUSIONS

In conclusion, the von Pirquet test should be applied only in the first two years of life as a diagnostic procedure, for after that age it loses its value. In older patients we have many ways of diagnosing active tuberculosis. The microscope, x-rays and the clinical history will all concur in establishing a diagnosis that leaves no doubts.

In infancy, however, tuberculosis nearly always begins in the mediastinal lymph glands, which are grouped at the hilus of the bronchus, and as this condition very often has no definite symptoms, it is unsuspected. A retardation in growth, a slight anemia or a slight elevation in temperature should suggest a von Pirquet test. A positive result would amply testify to the nature of the ailment.

A marked hypertrophy of the glands of the hilus occasionally causes a compression of the trachea or bronchus, and so gives rise to respiratory stridor and a croupy cough. In such cases the x-rays will fully reveal the nature of the condition. Except for these occasional cases, only von Pirquet's test can do us service.

It may be remarked that the x-ray diagnosis of hypertrophied glands of the hilus has led to many errors. The shadows seen are not always hypertrophied glands. Safety requires that the x-ray diagnosis be supplemented by a von Pirquet test.

European hospitals for the care of infants have adopted the von Pirquet test as a routine procedure. It is their publications which have inspired what is written here.

20 Maple St.

---

#### A SOUND RULE

*I resolve to speak ill of no man, not even in a matter of truth, but rather by some means to excuse the faults that I hear charged upon others, and, upon proper occasions, speak all the good I know of everybody.*—BENJAMIN FRANKLIN.

# Notes from the Illinois State Medical Society

Reported by George B. Lake, M.D., Chicago

ONCE upon a time, one of the towering figures in our national history walked the streets of an Illinois town and, when work was done, went home to supper, to a house that stood very "close to the side of the road." He was a "friend to man," whether there or in that other White House to which his destiny called him.

In Springfield, Abraham Lincoln's house still stands much as he left it. The chairs and tables; the pictures on the wall are as near as possible the way they were when he lived familiarly with them. It brings him much closer to the living heart of one's life than does the imposing monument erected to his memory in that city.

This charming town, with its tree-shaded streets and comfortable homes, was the place of the eighty-second annual meeting of the Illinois State Medical Society, in May, 1932.

The exhibits were placed and most of the meetings were held in the Knights of Columbus Building, which is well suited to the purpose. The opening session and the smoker were held at the Elk's Club. The weather was delightful.

## EXHIBITS

Having recently discussed the exhibits at the meeting of the American Medical Association, there is not a great deal more to be said about the commercial booths,

which would not be mere repetition. One thing, however, was shown there which was not on exhibit at the A.M.A. meeting—the Vacoliter, for giving large intravenous injections of sterile isotonic salt and dextrose solutions. Each container holds 1,000 cc. of the desired solution and, if

desired, a sterile needle, stopcock and tubing may be procured for its administration, thus placing this life-saving means of treatment within the range of every general practitioner. A "cold-quartz" body lamp was also demonstrated, which seems to possess certain advantages for the administration of ultraviolet-ray treatments and which is reported to be effective. The price of the apparatus seems rather high, comparatively.

In the scientific exhibit, which was surprisingly large and instructive for a state meeting, the newest and most promising showing was that of a method of studying the roentgenographic

findings of large groups of persons (as of school children, in tuberculosis studies), at a very considerable saving of cash outlay and of the time of the technical staff. This was shown under the auspices of the Illinois Tuberculosis Association and is the work of the Queensboro (N. Y.) Tuberculosis and Health Association and the Bellevue-Yorkville (N. Y.) Health Demonstration Staff. (see Fig. 1).

By this method, a large series of roent-



Courtesy, Milbank Memorial Fund, and Dr. M. W. Barnard.

Fig. 1.—Physician studying a roll of paper roentgenograms in a special viewing box devised for that purpose.

genograms can be made, at the rate of two per minute, on a roll of specially sensitized paper which, when developed, yields opaque, positive pictures which, while not showing quite such fine detail as that obtainable with a celluloid film, is accurate enough for rapid mass diagnostic work and can be produced at a cost less than one-third that of celluloid films, and studied by the technical and professional staff with much less time and effort. An extensive study of this method is now in progress.

#### ABSTRACTS OF SOME OF THE PAPERS READ

##### BICHLORACETIC ACID FOR CORNS, CALLOUSES AND WARTS

By Edward H. Ochsner, M.D., F.A.C.S.,  
Chicago, Ill.

As long as people will insist upon wearing shoes which are too small for them—especially those that are too low in the instep and too narrow in the tread—someone will be kept busy treating corns and callouses of the feet; and there is no reason why physicians should not do this work, but many sound ones why they should.

Glacial acetic acid has long been recognized as a corn remedy; trichloracetic acid has a number of uses, especially in the mouth, throat and nose; but Prof. Louis Kahlenberg, of the University of Wisconsin, seems to have been the first to call attention to the fact that bichloracetic acid is a powerful solvent of keratin—the substance of which corns, callouses and warts are composed.

The technic of using this remedy is as follows:

- 1.—With a camel's-hair brush, apply a thin coat of vaseline to the normal skin around the area to be treated, but do not put any on the treated area. It is well to have at hand a paste of sodium bicarbonate and water, to be used in case some of the acid should touch the normal skin.

- 2.—With a glass rod, apply a little of the acid to the lesion and let it soak in. Repeat this several times.

- 3.—When the acid is all absorbed, remove the vaseline with a pledget of cotton moistened with ether, apply a thin film of flexible collodion over the entire area, and let the patient go about his

business, to return in from three to five days.

- 4.—When the patient returns, cut off the hardened area with a sharp scalpel and repeat the treatment. From two to four treatments are usually sufficient to remove these thickenings, which will not return if the patient, thereafter, wears properly-fitting shoes.

This method, which is carried out in the same way upon warts, produces no scars and leaves the skin soft and flexible.

For a course of treatment like this the physician can charge and the grateful patient will pay, from fifteen to twenty-five dollars, which will buy a good many more groceries than can be purchased with a bill for \$300, for a laparotomy, on the books.

Be sure to obtain a pure specimen of the bichloracetic acid, which is a clear, colorless liquid at room temperature. The better-class pharmacists have it in stock or will procure it.

#### DIAGNOSIS AND TREATMENT OF FUNCTIONAL MENSTRUAL DISORDERS

By Floyd E. Keene, M. D.,  
Philadelphia, Pa.

Functional uterine bleeding may occur at any age between puberty and the menopause (or even after that), but is most common during the fifth decade of life.

The pituitary determines the periodicity of menstruation. Increased pituitary activity may cause postclimacteric bleeding.

There are three types of excessive uterine bleeding:

- 1.—The periods come more often than usual and the flow is more free.
- 2.—A period of amenorrhea is followed by continuous bleeding.
- 3.—The abnormal bleeding occurs midway between the normal periods (14th day), which corresponds to the time of estrus in lower animals.

Pain rarely accompanies functional uterine bleeding, and when it does is due to some organic lesion, such as pelvic inflammation, fibroids, etc. Chronic endometritis is very rare; but hyperplasia of the endometrium is part of the cyclic process. Dysovarium is a part of the picture of functional bleeding, the symptoms usually being those of Class 2, above.



Carcinoma of the fundus uteri is almost always postmenopausal, and a curettage, with microscopic study of the scrapings, is frequently necessary in making a diagnosis. In fact, curettage is of value in the study of all cases of postclimacteric bleeding.

Irregular uterine bleeding may be a symptom of some constitutional condition, such as heart or kidney disease or hypothyroidism. A change of climate or some other factor in the environment may clear up symptoms due to hormonal irregularities.

In the treatment of functional uterine bleeding in older women, full doses of radium may be used; but in patients within the childbearing period we must use great caution and very small doses, on account of individual variations in sensitiveness to these radiations.

Luteinization of the ovary, which is absent in functional bleeding, may be stimulated by a substance found in the urine of pregnant women, which contains considerable quantities of the luteinizing hormone of the pituitary. This treatment is especially useful in young women.

#### MALIGNANT DISEASES OF BONE

By Sherwood Moore, M.D., St. Louis, Mo.

A more persistent search of the skeletons of carcinoma patients, by x-ray studies, would reveal more frequent bone involvement than is generally realized.

In spreading, *sarcomas* follow the line of least resistance—through the blood vessels and spaces; not through the regional lymph nodes—and pulmonary metastases occur early. These latter are rare in myeloma, which generally spreads through the marrow system and causes death by this destruction. All myeloma cases die rather soon, and the same may be said of patients with osteogenic sarcoma, though one such patient of mine still survives, after irradiation by radium implantation and the use of x-rays for months.

Where bone metastases are present, the tumor is probably not sarcoma. Epithelial tumors occur at an earlier age and the metastases are multiple.

Roentgenologic study must include that of the chest. Sarcoma spreads through the blood and produces large, lobular involvements; carcinoma through the lymphatics, with more diffuse lesions.

In deciding upon the treatment of bone

tumors, we must find out whether they are primary or secondary. If confined to the distal parts of an extremity (below the knee or elbow), especially in young people, and solitary, the tumor is probably primary and radical amputation of the involved limb should be performed, above the joint proximal to the lesion. If located higher up, the tumor should be irradiated, especially if attended by much pain; if very large and painful, amputate and irradiate it.

Radiation therapy, especially in advanced cases, is largely a palliative, to be used, not as a placebo, but as digitalis is used in heart disease—with no idea that it will cure, but without any doubt that it will, in most cases, give much relief.

#### PATHOLOGIC CALCIFICATION

By David P. Barr, M.D., St. Louis, Mo.

Dystrophic calcification occurs in dead or dying tissues. It may be found in large uterine fibroids; frequently in the diseased pleura or pericardium; in cases of lithopedion; and in the pineal body in fifty percent of adults.

"Calcinosis" is calcification of the skin and subcutaneous tissues, as in acrocyanosis, scleroderma and Raynaud's disease, the two latter being essentially the same in this respect.

Where there is rapid destruction of bone, as in osteomyelitis, unless the kidneys speed up their work in eliminating the released calcium, it will be deposited in the soft tissues, which secrete acid.

Von Recklinghausen's disease is due to parathyroid excess or tumors—decalcification of some bones and tumors of bone. Hyperparathyroidism or viosterol poisoning may cause an increase of calcium in the bones or in soft tissues. Calcification of the arteries may be in the intima or in the media. Calcium stones may be found in the kidneys, as they are in one-third of all cases of von Recklinghausen's disease.

#### THE DISABLED GALL-BLADDER

By Alfred Brown, M.D., Omaha, Nebr.

If we are to handle advanced lesions of the gall-bladder satisfactorily, we must learn to recognize them in their incipency and do something about it. Gall-stones are not innocuous. Over 4,000 people die in the United States every year from this cause. A complete history is important in making an early diagnosis.

Deaver once said that seventy-five per-

cent of "gastric ulcer" is in the right lower abdominal quadrant; and seventy-five percent of "appendicitis" in the right upper quadrant.

From forty to fifty percent of the population have gall-bladder disease, which may or may not be inflammatory. In a series of autopsies, sixty-five percent showed gall-bladder lesions.

*Diabetes* is a great factor in gall-bladder disease, because the liver is a "sugar furnace." The trouble comes from eating sugar, not starches. The body can handle only 30 to 40 Gm. of galactose at a dose. The sugar consumption in the United States is high (about 110 pounds per capita per year) and has been increasing steadily since 1918, along with the decrease in the consumption of alcohol. *Diabetes and biliary diseases have also increased*, while "hobnailed liver" has decreased, although the deaths from alcoholism increased nearly 40 percent between 1918 and 1929. Cholesterolemia also probably results in gall-bladder changes.

The early, biochemical type of gall-bladder disease, which used to be called "biliousness" and "dyspepsia," is a disturbance of liver physiology and the routine physical examination shows little. Ordinary laboratory tests are also unreliable, though cholecystography (using stereoscopic films to localize shadows and estimating the filling and emptying time) is important. Bile is retained, in these cases, for more than two hours after the fat meal.

There is one significant physical sign—a band of hyperesthesia on the back (test with a pin, which feels hot and sharp), about an inch and a half wide, extending from the eighth dorsal vertebra to the right posterior axillary line. Boas' pressure point, to the right of the tenth dorsal vertebra, and Head's zones are of less importance. If such a zone is found on the left, suspect the stomach or duodenum.

In chronic cholecystitis, the blood sedimentation time is from 60 to 300 minutes. If pus is present, it falls to 30 minutes; and this happens if there is pus anywhere in the belly, pelvis or appendix.

Spastic colon (*not colitis*) is often present in gall-bladder disease. The stomach and colon, pancreas and liver, work together.

If a diagnosis of disabled gall-bladder is made, medical treatment is unsatisfactory. Do a *cholecystectomy*. At operation the gall-bladder may appear normal and be

free of adhesions; but fine, white streaks will be found on the anterior surface of the liver, radiating from the neck of the gall-bladder, due to deposits of fat and loss of translucency. The lymphatic gland at the junction of the hepatic and cystic ducts will also be found enlarged.

#### PARENTERAL ADMINISTRATION OF LIVER EXTRACT POSTOPERATIVELY

By J. K. Narat, M.D., Chicago, Ill.

Liver extract is useful in liver insufficiency, tuberculosis and several other conditions, including secondary anemia, which have nothing in common with pernicious anemia. It increases the appetite in cancer of the stomach. All these facts suggest that it should be of value in postoperative conditions.

It would be impracticable to give whole liver extract, by mouth, to patients after operation; but, as fraction G has been found to be more potent than the whole extract, it seems rational to give this fraction, subcutaneously or intramuscularly, in postoperative treatment.

The extract made for parenteral use from horse livers (Chapel's) is clear and subcutaneous injections are painless. Lilly's extract causes pain when given in this manner, but this can be largely overcome by injecting 2 cc. of 0.5-percent procaine solution before and after and by taking care not to leave any of the extract in the subcutaneous fat.

These injections, given postoperatively, cause some improvement in the blood picture, but much less than that in pernicious anemia. The most notable effect is an improvement in appetite and in the subjective sense of general wellbeing, which occurs after a few days (2 cc. of the extract are injected daily for five days). In cases with hemorrhage and infections, convalescence is definitely shortened.

This is not a panacea, nor is it suitable for routine use, but it seems to stimulate the body's powers of defense. In postoperative anemia, a blood transfusion gives more prompt and positive results.

That the effect of injecting liver extract is not due solely to its character as a foreign protein, is shown by the fact that the marked leukocytosis and sharp reactions, seen after the latter type of therapy, are missing. The general systemic disturbance after injecting liver extract is negligible.

### LOCAL ANESTHESIA IN FRACTURES AND DISLOCATIONS

By M. D. Willcutts, M.D.,  
Great Lakes. Ill.

In a series of 224 fractures and dislocations, treated at the Great Lakes Naval Training Station, local anesthesia has been found superior to general anesthesia as an aid to reduction. Absolute asepsis in making the necessary injections is essential.

After doing a transverse regional block

above the lesion, a 0.75 percent solution of procaine is injected into the bellies of the contracted muscles. The anesthesia lasts for three or four hours after reduction. Injections should not be made into the site of the fracture.

This method gives good anesthesia and relaxation in simple and compound fractures. The patient is awake and cooperative, during and after the reduction. In difficult lesions of the lower extremities, spinal anesthesia may be used if necessary.

28 East Huron St.

## The Newer Antigens

### Bacteriophage and Antigen (Antivirus) of Besredka

By Edgar B. Carter, A.B., Highland, Park, Ill.

**I**N recent years there have been developed, in Europe, two entirely new forms of therapy for bacterial infections: (1) bacteriophage; (2) the antigen of Besredka, which he called the antivirus.

Historically, they are synchronous. Therapeutically, they are used in much the same manner. Immunologically, they each involve new and radical theories of explanation that are widely different. Practically, they are entirely unlike, although they are both offered in the liquid culture medium in which they have been developed.

Because they are both antigens for stimulating the production of the active immune process, and because they are both developed in the broth cultures of the bacteria, they are classed together in this presentation.

The antigen according to Besredka is licensed by the United States Government as "Bacterial Antigen prepared from"—certain bacteria; and the bacteriophage is licensed under the name of "Bacterial Antigen prepared from"—certain bacteria—" (Specifically Lysed)." The Swan-Myers Company, a division of the Abbott Laboratories, was the first laboratory in the United States to be licensed by the Government for the manufacture and sale of the bacteriophage and antivirus preparations.

#### BACTERIOPHAGE

The exact nature of bacteriophage is yet to be explained. Many theories have been

advanced, but to each theory certain objections may be raised. According to d'Herelle, the bacteriophage is an ultra-microscopic organism which is non-pathogenic for animals but which is specifically parasitic upon various bacteria. Its presence is manifested by its ability to actually multiply prodigiously in cultures of the bacteria against which it is specific, and by its power of actually dissolving the bacterial bodies.

There are many objections to d'Herelle's explanation of the nature of bacteriophage, but the fact still remains that it has some of the attributes of a living entity: It grows and multiplies on a pabulum of bacteria; it is easily killed by heat or chemicals.

Bacteriophage, specific against many kinds of bacteria, has been isolated by many laboratory workers throughout the world. The strains have usually been recovered from animal bodies or from something that has been contaminated by fomites from the animal body. According to d'Herelle, bacteriophage could usually be recovered from an animal body at a time when the animal was recovering from a bacterial infection. He felt that it was a natural part of the immune mechanism of the host. Bacteriophage has been frequently recovered from urine, feces or sewage.

Once the culture of bacteriophage has been isolated, it may be maintained indefinitely by growing it on cultures of the

bacteria against which it is specific. In the laboratory, the commercial bacteriophage is prepared by first inoculating flasks of liquid culture medium with bacteria, incubating them until a good growth is established and then inoculating with a small amount of the "seed phage," specific against that particular kind of bacteria. Upon further incubation, bacteriophage multiplies rapidly at the expense of the bacteria, and not of the culture medium. The bacterial growth is rapidly cleared through the lytic action of the phage. As a further safeguard, the clear broth is passed through Berkefeld filters and the "apparent sterility," so far as bacteria are concerned, is established by appropriate tests.

Before the product is released, actual titrations of the "sterile" phage dilutions are made to determine its relative potency. Commercial phage represents a large number of strains of bacteriophage and is effective against many strains of the bacteria. It contains the ingredients of the broth culture medium, in addition to the bacteriophage and the dissolved bacterial protein.

#### Application and Use

The therapeutic efficacy of the bacteriophage may be due to four or more possibilities:

- 1.—Its power to dissolve the bacterial bodies.

- 2.—Its ability to force some of the microorganisms into the "rough," non-virulent form.

- 3.—The fact that, according to the work of Smith and Nelson, it greatly increases the susceptibility of the homologous organism to phagocytosis.

- 4.—The antigenic effect of the dissolved bacterial protein.

The bacteriophage may be injected subcutaneously, as a vaccine is given, in doses of 0.5 to 2 cc. It is usually promptly effective when applied locally at the site of the lesion. It may be instilled into a fistula or body cavity or it may be applied in the form of a wet dressing, covered with oiled silk, waxed-paper or rubber. Such wet dressings, if not soiled with pus, may remain in place for twelve to twenty-four hours and have the lost moisture replaced by the addition of small quantities of cooled, boiled water. A combination of the local treatment and the subcutaneous injection may be desirable in refractory cases.

The bacteriophage of staphylococcus, as commercially prepared, has been tested against more than one hundred freshly isolated strains of *Staphylococcus aureus* and has been found effective to a greater or less degree with each of them. It has been effective against more than one third of all strains of *Staphylococcus albus* against which it has been tried. It may be used for all infections of *Staphylococcus aureus* and for many infections caused by *Staphylococcus albus*, and has been especially effective in the treatment of boils, carbuncles, acne and staphylococcal cellulitis and osteomyelitis. It has been used effectively in staphylococcal meningitis, by direct injection into the spinal canal.

Bacteriophage staphylococcus-coli is a mixture of equal parts of bacteriophage staphylococcus and bacteriophage *Bacillus coli*, which is effective in the treatment of many suppurative lesions in or about the abdominal and pelvic regions. It has been of definite value in many cases of infected bed sores, surgical wounds in the abdominal cavity, appendiceal abscesses, fecal fistulas and perineal lacerations.

Bacteriophage streptococcus is a mixture of several phages, effective against many strains of *Streptococcus hemolyticus* and *Streptococcus viridans*, which is offered for experimental use in streptococcal infections. It has been used with apparently great effectiveness in cases of erysipelas and in various streptococcal infections.

Because of the large amount of bacterial protein and the components of the original culture medium present, commercial bacteriophage is not recommended for intravenous use. In some patients, critically ill, it has been used intravenously, where heroic methods are indicated, and with apparently brilliant results. Even when the risk seems to justify the intravenous administration, small doses must be used cautiously.

#### ANTIGEN (ANTIVIRUS) OF BESREDKA

According to Besredka, the antiviral is a sterile solution, containing products of bacterial growth which are antagonistic to toxins formed by bacteria in the body and inhibitory to bacterial development. Like bacteriophage culture, it is a stimulus to leukocytosis and phagocytosis. The commercial product is prepared by growing virulent pathogenic bacteria in special broth until the products of their metabolism

are so concentrated that the growth of the bacteria is no longer possible. The culture is then filtered through a sterile Berkefeld filter, to remove all bacteria. The presence of antiviral in the filtrate is demonstrated by its ability to prevent growth of the same kind of bacteria when such are inoculated into it. However, it will support the growth of other kinds of bacteria, which fact indicates that the nutrient value of the broth has not been depleted.

#### Action and Use

Apparently the local application of the antigen to foci of infection, involving the

same species of bacteria used in preparing the antigen, has the effect of stimulating the exposed tissues to the production of local immunity. At the same time, it inhibits the development of the bacteria. It may also be used as is a bacterial vaccine, by subcutaneous or intracutaneous injection. Subcutaneously, doses of 0.25 to 2 cc. are administered; intradermally, doses of 0.1 to 0.5 cc. are given.

Bacterial antigens made from staphylococci alone and from staphylococci, streptococci and *B. coli*, are available commercially.

504 Sheridan Place.

---

### A MODERN PSALM

*Behold the nations of the earth were sore stricken and cried to Heaven in their distress.*

*Fear and heaviness were upon them, for they said their troubles were indeed great.*

*Those in the market place remained idle, and sadness reigned at midday.*

*And they appealed to High Heaven to deliver them from their afflictions.*

*And the Lord looked down upon the peoples, and lo! no cause was there for their cry.*

*Their granaries were full to overflowing. Of wool and cotton and oil was their store abundant.*

*Means and knowledge had they to create wealth of vast magnitude, whereby happiness might come to all.*

*Neither did they lack aught of what was to be desired to make life fruitful.*

*And the Lord spake sternly to His people, that their afflictions were but false imaginings.*

*They were as surly children, spoilt and surfeited with excess.*

*And He bade them arise and call together their wise men — if perchance any such still remained among them.*

*And to devise such simple ways as were required, that the overabundance might be put to good use;*

*That hunger, idleness and wretchedness might cease from the land and the people be fittingly clothed and sheltered.*

*And the Lord was wroth with His people. Had He not given them of wealth undreamed, and in their obstinate folly had they not failed to use it wisely?*

*The Lord gave grave warning to His people to cease their foolish complaint lest real evil befall them;*

*That need may come for lessons to be taught by a hard taskmaster, and plague, pestilence and famine smite the land.*

*And a great Angel, full of love and compassion for humanity said, "Lord, how comes this folly to Thy people?" And the Lord answered, "Through selfishness and greed, cruelty, and the exploitation of man by man."—W. M. D., in World Theosophy.*



# PHYSICAL · THERAPY AND RADIOLOGY

ASSOCIATE EDITORS

FOR PHYSICAL THERAPY

FRANK THOMAS WOODBURY, B.A., M.D.  
JOSEPH E. G. WADDINGTON, M.D., C.M.

FOR RADIOLOGY

HENRY SCHMITZ, M.D., F.A.C.S., F.A.C.R.  
WILBUR H. GILMORE, M.D.

## PHYSIC, PHYSICS AND PHYSICIANS

THE practice of scientific medicine takes tribute of all things in nature for use in the prevention, amelioration, cure and modification of abnormal structure and function, which we call disease.

Empiric medicine, with its charms and incantations, its magic formulas and potions, its spirits and essences, gradually gave way to chemistry and pharmacology, based upon physiologic effects. Herbs and simples became refined and the druggist became the chemist, and finally the pharmacist, to fill intelligently the prescription of the scientific physician, in a form both accurate and elegant, which might satisfy both the material and esthetic needs of the patient.

The manufacturing druggist next came to relieve the dispensing pharmacist of much of his work of selecting his crude drugs and of extracting, purifying, standardizing and compounding medicines. Thus a higher standard of purity and accuracy of quantity were obtainable, in forms acceptable to the patient and satisfying to the prescribing physician. The manufacturing druggist likewise contributed greatly to the progress of medical practice by maintaining a large force of skilled labora-

tory workers, always busy investigating new medical substances and even making physiologic tests to assure potency and nature of action.

A new prescription now enters the field of scientific medicine—the prescription of physical agents for physical therapy, in addition to chemical agents for medicine proper. This prescription is based upon the laws of physics and of biophysics. It requires for its fulfillment the availability of dependable apparatus of a highly technical nature and the application of kinetic energy directly into the tissues of the patient, to produce remedial effects by thermal, mechanical or chemical reactions. The biophysicist now takes his place with the bio-chemist, to assist the physician in determining the effects of physical therapeutic energy; and we are just passing through the threshold of a new era of medical practice, in which the electrical technician also becomes an essential partner with the physician, as the pharmacist has been.

No hospital having a department for physical therapy should be without its physical laboratory, under the direction of a skilled electrical technician, who is

trained in understanding the technical details of the practice of physical medicine. He should not be merely a technician, able to repair the special therapeutic apparatus, but a designer and an inventor, able to understand the newer medical problems as they arise and suggest apparatus to meet them. He should advise and even oversee the actual treatments where accurate records requiring instruments of delicacy and precision are to be made.

Back of him will be found the reliable manufacturer of electrical and mechanical apparatus for therapeutic use; not only those for use directly under the control of the physician, but also models for home health use. He resembles, in this, the manufacturing pharmacist.

Unreliable drugs and inadequate apparatus alike defeat the aims of medical practice. A manufacturing and distributing force to handle therapeutic appliances for physicians' use and for use in the home should be built up to take over all these important matters and handle them in a reliable way.

For the same reason that department stores should not sell medicines over the counter, physical therapy apparatus should not be sold by firms whose personnel knows neither what it is they are selling nor how the machines should be used. Much would be gained in reliability, in satisfaction and in service by such a segregation. One of the complaints which have found voice in the laws, in some places, is that ignorant salesmen have misled both

the public and the inquiring physician alike, by claiming virtues for their products not subsequently realized, because their paramount business was to sell; not to be scientific.

The real difficulty of the problem of creating a satisfactory service, is one of organization. The present distribution outlets for physical therapeutic appliances cannot compare in number and in easily available service with the efficient distribution outlets for drugs. The reason is that the small business volume for strictly professional service does not permit numerous outlets, just as the pharmaceutical business volume alone would by no means permit the present number of drug stores, with a schooled pharmacist in every one of them.

As an efficient service for physical therapy appliances must include facilities for prompt repair, it would appear that the better class of electrical appliance stores, now available everywhere, would be the proper outlets, if they provided a special department for them, under the direction of an electrical technician, with the proper education and experience.

Reliable goods, thoroughly understood by a sales force which also knows the medical aspect of the picture, would restore some of the confidence lost, in some quarters, and remove the ballyhoo which befogs the main issue; viz., is the apparatus reliable, what kind of energy will it furnish and how intensively.

F. T. W.

---

#### RESEARCH IN RADIATIONS

*The time has come for the establishment of the evaluation of the rays and energies now being discovered. Ahead of us, for decades, lie carefully-planned experiments into the influences and consequences of radium, x-rays, and all that power which invisibly permeates and magnifies the atmosphere of the planet. Without question, one must found laboratories for untiring, decade-long experiments. There psychic energy will also be studied, as will the physiology of the spirit and thought, and the quality of light-bearing agents, life-givers and life-preservers. It is a vast creative field, and during these researches, fearlessness before Infinity will be manifested. — NICHOLAS ROERICH, in "Realm of Light."*

# Hyperpyrexia Produced by Diathermy

By J. Cash King, M.D., Memphis, Tennessee

SINCE 1929, medical literature has contained an unprecedented amount of information on the subject of therapeutic fever. Numerous methods of producing a fever have been described. Consequently, many physicians are using pyretotherapy who have not used it in the past, and others are beginning to use physical energies to produce these temperatures, in preference to the febrile diseases and other toxic products which they had formerly employed.

It is in answer to requests from those who are taking up the use of the diathermic method that I have chosen the technical phase of this subject for this paper.

## TECHNIC

Three outstanding factors or headings cover the subject of technic in a general way. These are: equipment, procedure, and personnel in charge of supervision and actual administration of the treatment.

### Equipment

**Diathermy machine.**—Any diathermy machine can be used, provided it is capable of producing and maintaining a load of 4,000 milliamperes and is so constructed that the patient can be handled by the attendant without electrical shock or causing a spark to jump from the patient. However, a machine of higher capacity—6,000 to 10,000 M. A. is by far more satisfactory.

**Electrodes.**—The electrodes used for raising the general body temperature of the patient should be as large as possible and yet fit snugly to the surface of the front and back of the torso of the patient. Several different types of electrodes have been used successfully. The essential points in their construction are as follows:

1.—The total amount of the electrode surface applied to the anterior part of the body should be twenty-five percent greater than the opposite electrode, which is applied to the posterior surface of the torso.

2.—A satisfactory jacket or corset arrangement must be used, to hold the electrodes constantly in contact with the patient's body.

3.—They must be of such material and construction that they will be durable enough to withstand a large number of treatments without developing mechanical flaws. The durability of the electrodes is greatly increased by making shallow scallops on the edges of the heavy electrode foil and mounting this foil on thick sponge



Fig. 1.—Patient receiving fever treatment. Box arrangement over the patient is heated by nine carbon filament lights. This arrangement is used in preference to blankets to insulate the patient.

rubber. Perforations through the electrode (tin) foil, as advised by some, merely reduce the amount of usable electrode surface and accomplish no particular good. The connections leading from the electrode should be of the best heavy (insulated) wire, and securely attached to the outer side of the electrode foil.

**Clinical thermometers.**—Only the best grade of thermometers should be used, and a rectal thermometer should be available for occasional checks of rectal temperature, if desired.

**Insulating material.**—For the purpose of insulating the patient against the loss of heat we formerly used a number of rubber sheets and heavy woolen blankets, as described in former reports<sup>1, 2</sup>; but since this heavy covering proved to be one of the most annoying and tiresome features of the treatment, to the patient, we have devised a simply-constructed "baking" cabinet, which has proved to be very satisfactory and is much better than the method formerly used.

This cabinet, which is shown in Figure 2, is of simple construction, very inex-

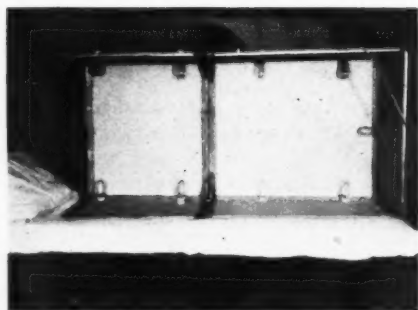


Fig. 2.—Inside view of cabinet showing arrangement of lights and the way the two parts are brought together when placed over patient during the treatment.

pensive, and even though rather crude in its appearance, serves well the purpose for which it was intended. It is made of beaver board, with light wood framework about the corners and edges, and is constructed in two parts, in order to facilitate handling and storage of the apparatus when not in use. When the two pieces are placed end to end over the patient it makes a comparatively tight box, which is sixty inches long, eighteen inches high and thirty-six inches wide, and is equipped with nine carbon-filament light bulbs. By the use of these lights during the diathermy treatment, the temperature in the cabinet can be raised to 120°F., or even higher.

#### Procedure

The success of this treatment, as in surgical operations, is somewhat dependent upon the adoption of a carefully planned, routine procedure. For the benefit of those who have not used this treatment before, I describe the following procedure which has given satisfactory results in my hands.

1.—*Preparation of the patient.*—The patient should have a careful physical examination before the series of treatments is begun, but he requires no special preparation for the treatment. Dehydrating laxatives immediately before the treatment should be avoided and the patient may be permitted to eat a light, but nourishing, meal two to three hours before the treatment is begun. Most patients, particularly those who are nervous, should be given some form of sedative immediately before or during the treatment. For this purpose we have found Sodium-Amytal, in 3 to 6 grain (0.2 to 0.4 Gm.) doses, given by

mouth or by rectum, a very satisfactory drug. However, when a series of ten or more treatments is given, one must watch for the cumulative effect of the drug, which may cause considerable drowsiness.

2.—*Preparation of the bed.*—The bed on which the patient is to be treated should have a full-length, rubber sheet spread over the mattress, and on top of this should be placed a cotton blanket, to absorb and prevent puddling of the perspiration; a bed sheet is spread over the blanket and the patient placed in position.

3.—Carefully apply the electrodes to the body of the patient.

4.—Record the patient's temperature, pulse and respiration.

5.—Place the heating cabinet over the patient, as shown in Figure 1, and turn on the carbon filament lights. A heavy blanket may be thrown over the cabinet for additional insulation against loss of heat.

6.—Connect the diathermy machine to the electrode terminals and turn on the diathermic current, slowly raising the milliamperage in order to reach 4,000 to 5,000 M. A. within ten to fifteen minutes.

7.—Continue the diathermy, at 4,000 to 6,000 M. A., until the temperature is within one degree of the desired elevation; then cut off the current. (Keep accurate records of the temperature and pulse at least each fifteen minutes during the treatment, up to this time).

When the temperature has reached this point—within one degree of the desired peak—the lights in the cabinet are left on and the temperature and pulse recorded every ten minutes. As a rule, the patient's temperature will continue to rise for at least one degree Fahrenheit without additional diathermy. When it has reached the desired peak, the lights in the cabinet should be turned off. However, they may again be turned on at intervals, if necessary to maintain the patient's temperature.

If at any time the temperature begins to rise quickly and tends to go above 105°F., or at any time the pulse rate becomes accelerated to a count above 140 or 150, the patient should be cooled off slowly by removing the rubber sheet, in part or entirely, from the head of the cabinet. If this does not lower the temperature promptly enough, hydrotherapy (in the form of tepid baths) may be used

*Comment.*—If the patient is closely observed by the technician, nurse or physician who is giving the treatment, high temperatures that require treatment will not occur.

Water, at a temperature of 104° to 105°F., may be given the patient at regular intervals during the treatment. When the fever has been maintained at the peak the desired length of time, the rubber sheet from the head of the cabinet should be removed. The water given the patient after this time may be cooler than that used during the treatment (tap water is usually permissible).

When the temperature has returned to around 100°F., the patient may be dried and the bed linens changed, but he must not be permitted to get up and stir about for at least an hour after this time.

8.—Nourishing diet and a great amount of fluids should be given the patient between treatments.

#### Personnel

##### *In Charge of Supervision and Actual Administration of the Treatment*

Under this heading we usually have, first, the physician who is directing the treatments—who determines whether or not fever therapy is indicated and, if so, what type of temperature curves should be produced and the frequency and number of treatments that should be given. It behooves this doctor, not only to read the available literature on the subject of fever therapy, but also to make a study of the pathologic physiology of fever itself.<sup>1</sup> This is necessary because it has been found that every case does not react to this treatment in the same way. Consequently, it is essential that every case be individualized, and the duration and intensity of the treatments be determined by the patient's reaction to the temperature, as observed during the first treatment.

Too much importance cannot be put upon the selection of the nurses or attendants who are left in charge of the actual care of the patient and the administration of the treatment. These individuals must be thoroughly capable and reliable. I have authentic reports of two cases in which serious consequences followed these treatments, due to neglect of the patient by the technician giving the treatment. Too often the person who gives the treatments, after having observed a number of cases through a series of treatments, feels that he knows

exactly how fast and how great the rise or fall in the temperature will be, and neglects the frequent temperature recordings suggested in the description of the procedure. It is this negligence that is most likely to permit serious complications. When one is left in charge of giving these treatments, he should take the temperature and pulse at frequent intervals, as directed, and *must not leave the patient, under any circumstances, until his temperature has returned to within one degree of normal.*

#### INDICATIONS

From the reports in the literature of the number of diseases treated with febrile reactions, as well as the degree of success apparently obtained with these measures, one is inclined to believe that the profession has been too optimistic, and that many are expecting too much of fever therapy. It is to be feared that many will permit their optimism to surpass their knowledge of the true values and application of this form of therapy, which will undoubtedly lead the profession to a change from optimism and enthusiasm to pessimism and disuse. However, it is true that we probably do not, as yet, know all the conditions in which fever therapy may be used successfully; but it is my belief that the measure should be applied as an adjunct to other known therapeutic agents, rather than with the hope that it is a "sure cure" and the only therapeutic remedy to use.

Therapeutic fever produced by diathermy is the safest and most reliable in the majority of cases, but there are several other methods of producing therapeutic fever that are safe and efficient and, in some cases, these procedures should be used in preference to the diathermic method. Therefore, it behooves those who use febrile reactions in the treatment of disease to study all of the available methods of producing therapeutic fever, in order that they may choose the method most applicable to their patients.

At the present time the results obtained with therapeutic fever produced by diathermy indicate that it is the method of choice in the treatment of general paralysis,<sup>2, 3</sup> and that it is one of the best methods of producing therapeutic fever as a helpful procedure in the treatment of chronic arthritis,<sup>4</sup> systemic syphilis of all varieties,<sup>5</sup> multiple sclerosis,<sup>6</sup> chronic gonorrheal infections,<sup>11</sup> Parkinson's syndrome, and probably



bronchial asthma<sup>7, 8, 9</sup> and chorea.<sup>10</sup> It is to be hoped that it will be a useful adjunct in the treatment of cancer.

The number, intensity and frequency of treatments used in the diseases mentioned varies with the patient's condition. We also note a definite variation in the opinion of the authors reporting on this subject.

For **general paralysis (paresis)**, a series of twelve to seventeen treatments is recommended. The frequency of these treatments may be varied to meet the patient's condition. Treatments every day or every other day have given best results in my personal experience. The intensity may vary between 103.5° and 104.5°F., and should be maintained at this level for two and one-half to three hours.

In **chronic arthritis**, 104°F. should represent the peak of the temperature curve, and the interval between the treatments may be varied from one to three days. Otherwise, the treatments are given as in paresis. Sometimes even more treatments are required to accomplish the desired result.

**Systemic syphilis:** I use and recommend that only two treatments be given per week, one immediately after the weekly arsphenamine injection and another three days later. The intensity of these treatments should be 104° to 104.5°F., maintained for two hours. This routine is continued through the series of seven to nine injections of arsphenamine.

**Multiple sclerosis:** My experience in treating this condition has been very limited. For reference on this subject I suggest Schmidt<sup>6</sup> and Stephenson.<sup>12</sup>

#### CONTRAINDICATIONS

It is almost impossible to list any number of conditions as being definite contraindications to the use of fever therapy, because, after all, whether or not fever therapy of one type or the other can be used in any given case must be determined by the doctor in charge of the case. For instance, any disease that has progressed to the point of depletion of the patient's physical resistance would prove to be a

definite contraindication, because the patient would be unable to withstand the vascular reactions brought about by fever therapy. A patient's physical condition has much to do with the type of treatment used and the intensity of the reaction produced, so that one who is unable to stand extremely high temperature for a long period of time might be materially benefited by a less extensive febrile reaction. Therefore, no hard and fast rule can be made in this matter.

With these reservations, the following might be listed as contraindications:

- 1.—Active lung lesions, particularly of a tuberculous nature.
- 2.—Heart disease that is producing symptoms.
- 3.—Extensive scarring of the skin surface of the body, or other conditions that bring about extensive destruction of the sweat glands.

#### REFERENCE

- 1.—King, J. Cash: Therapeutic Fever Produced by Diathermy: Its Present Developments and Future Possibilities. Read before the 17th annual meeting of The Radiological Society, December, 1931, and to be published in the *Journal of Radiology*.
- 2.—King, J. Cash and Coker, Edwin W.: Therapeutic Fever Produced by Diathermy, with Special Reference to Its Application in the Treatment of Paresis. *J. Sou. M. A.*, Vol. 23, March, 1930.
- 3.—Neymann, Clarence A. and Osborne, S. L.: The Treatment of Dementia Paralytica. *J.A.M.A.*, Vol. 96, Jan., 1931.
- 4.—Pemberton, Ralph: "Arthritis and Rheumatoid Conditions." Lea and Febiger, Phila., 1929.
- 5.—King, J. Cash: Hyperpyrexia Produced by Diathermy Used in the Treatment of Chronic Afebrile Diseases. Read before the 25th annual meeting of the Southern Medical Association and to be published in the *J. Sou. M. A.*
- 6.—Schmidt, Wm. H. and Weiss, B. J.: Fever Produced by Diathermy: Its Value in Multiple Sclerosis and Other Chronic Diseases. *Phys. Therapeutics*, xlix:8, Sept., 1931.
- 7.—Miller, Hyman and Piness, George: Hyperthermia Induced by High-Frequency Electric Current in the Treatment of Intractable Asthma. *J. of Allergy*, Vol. 2, Sept., 1931.
- 8.—Leopold, Simon S. and Stewart, Sloan G.: The Effects of Fever. Either Accidentally Incurred or Artificially Produced, in Bronchial Asthma. *J. of Allergy*, Vol. 2, Sept., 1931, No. 6.
- 9.—Feinberg, Samuel M.: Fever by Diathermy in the Treatment of Allergic Disease. *J. of Allergy*, Vol. 2, Sept., 1931, No. 6.
- 10.—Sutton, Lucy Porter: Treatment of Chorea by Induction of Fever: Preliminary Report. *J.A.M.A.*, Vol. 97, Aug., 1931.
- 11.—Duncan, I. G.: Treatment of Gonorrhea in Women, with Special Reference to the Use of Diathermy in Tubular Infections: *Memphis M. J.*, October, 1931.
- 12.—Stephenson, Junius: Diathermy in Multiple Sclerosis: Report of Progress. *Phys. Therapeutics*, Vol. xlv, Aug., 1928.

915 Madison Ave.

## CLINICAL MISCELLANY

### X-Ray Therapy in Skin Diseases

**T**HE first precaution to be observed in the dermatologic application of x-rays is not to be too persistent. Even small exposures, repeated over a long period, may produce telangiectases and atrophy of the skin. If a disease fails to respond to an ordinary effective amount of treatment it is usually best to change to something else. In the treatment of psoriasis, for example, it must be remembered that the disease will probably persist throughout the patient's life, that the psoriatic lesions are radiosensitive and react to smaller doses of x-rays than does normal skin, and that even small doses of x-rays cannot be continued indefinitely without some danger of producing atrophy and telangiectasis. It is wise, therefore, for both the patient and the physician to be content with results considerably short of perfection.—DR. A. W. ERSKINE, of Cedar Rapids, Iowa, in *Illinois M. J.*, Feb., 1932.

### Neuritis of the Forehead and Scalp

**N**EURITIS of the forehead and scalp is often very painful and does not easily respond to medicinal treatment. Frequently one spot alone is responsible for all the trouble; in such cases the galvanic current (not exceeding 1 milliampere, applied for not more than five minutes over the most painful spot) gives immediate relief. In the forehead the nerve which is chiefly affected is the supratrochlear branch of the frontal nerve.—DR. W. B. JONES, in *Brit. M. J.*, Sept. 19, 1931.

### Physical Therapy in Cardiac Disease

**P**HYSICAL therapy in angina, with or without coronary involvement or renal disease, is quite effective. Drugs are often inevitable; nitrites, narcotics and purin derivatives have to be resorted to in the severer cases; in the milder, more lasting relief is often obtained with diathermy; its repeated use for prolonged periods offers great satisfaction.

All cardiac patients were considerably relieved by repeated diathermy and auto-

condensation, in addition to general treatment. Other conditions in which physical therapy measures (high-frequency currents, autocondensation, massage, colon irrigation) were found highly satisfactory are coronary thrombosis and essential hypertension.—DR. J. GUTMAN, of Brooklyn, N. Y., in *Brit. J. Physic. Med.*, Dec., 1931.

### Röntgen-Ray Therapy in Infantile Paralysis

**R**EVIEWING the subject of poliomyelitis, in *Arch. Phys. Therapy. X-ray, Radium*, Dr. L. T. Le Wald, of New York City, finds that opinions regarding the specific value of roentgen-ray therapy in infantile paralysis are divided. It should, however, be noted that nowhere, among those using the method, has there been voiced any distinct opinion against its use, or claiming its harmfulness in this condition.

On the basis of what has already been accomplished, radiation therapy promises definite amelioration and improvement of certain symptoms, and hence may well be considered as a potent therapeutic adjuvant in the management of anterior poliomyelitis.

### Postoperative Use of Physical Therapy

**O**N comparing records, I find that my patients are spending approximately three and one-half days less in the hospital than they did before I used physical therapy as a routine postoperative treatment.—DR. H. C. MILLER, of Omaha, in *Arch. Phys. Therapy, X-Ray, Radium*, Feb., 1932.

### Infrared Rays in Cases of Pylorospasm

**E**XCELLENT results, in 4 cases of pylorospasm in infants, have been obtained from the use of infrared rays. Treatment is begun as soon as the condition is diagnosed. The infrared lamp should be placed as close as the skin will tolerate, making the exposure on the abdomen. The nurse or mother keeps her

hand on the baby's chest, the back of the hand serving as a guide to the intensity of the heat. I prefer to give one treatment each day on the back, instead of on the abdomen. Several days or weeks may

pass before the infant is completely relieved, but improvement is generally observed from the first.—DR. C. E. BRUSH, Nashville, Tenn., in *Phys. Therap.*, Feb., 1932.

## RECENT ABSTRACTS

### Ultraviolet Radiation of Skin Diseases

In the treatment of skin diseases by ultraviolet radiation, Dr. R. Aitken, of Edinburgh, in *Practitioner*, Mar., 1932, claims that the carbon arc lamp is of more use than the mercury vapor lamp, one reason being that a more satisfactory dose can be administered.

As conditions amenable to ultraviolet radiation, tuberculosis of the skin stands foremost, and the author considers that lupus yields to general radiation, especially the catarrhal type.

Ultraviolet-ray treatment has been claimed as an infallible cure for alopecia areata. The author thinks it a valuable remedy in many cases, but to speak of it as a specific is to show a lack of knowledge and experience of the disease. The doses to the scalp should be sufficiently great to produce a brisk reaction and the redness ought to be allowed to pass off completely before another dose is given. In complete baldness the head ought to be treated in sections at intervals of a few days.

Brilliant results are claimed for radiation in psoriasis by non-dermatologic writers, but no dermatologist ever seems to have attained such results. The cases that respond are those in which the patches are thin; when the patches are thick they are more resistant. It is not desirable to give doses that produce a brisk reaction.

In ringworm of the scalp, the importance of the ultraviolet rays is for diagnosis rather than treatment.

In most other ordinary skin diseases, better results can be obtained with other remedies than with the ultraviolet rays, and failures with the latter bring the radiation method into disrepute.

### Physical Exercises in the Prevention of Pulmonary Tuberculosis

In *Brit. J. Physic. Med.*, Dec., 1931, Dr. G. D. Read, remarks that it is upon the function of respiration that success or failure in the prevention of pulmonary tuberculosis rests.

Between the ages of nine and sixteen, children of both sexes attain what may be called their "angle of poise." This angle is obtained with the child standing sideways to the observer; it will be noticed that there is a definite angle which the neck, from the seventh cervical vertebra to the base of the skull, forms with the line of the trunk.

The erector spinae muscles of a child form the line of the back seen laterally, and the sternum the line of the front; these two are

not parallel, but converge slightly to the top of the thorax. A line drawn equidistant from back and front meets a similar line drawn through the middle of the neck, at about the level of the seventh cervical vertebra at a definite angle. In a normal healthy child of good figure this angle in the natural pose approximates  $170^{\circ}$  to  $175^{\circ}$ . When it becomes as small as  $150^{\circ}$  there is a definite limitation in the ability of the child to expand the upper part of the chest. The less the angle, the greater the obstacle to efficient thoracic breathing and the greater predisposition to infection, especially tuberculous infection.

The object of physical exercises in all such cases should be to correct a bad "angle of poise" and to maintain a good one. To a great extent this will be an individual training problem. The author's experience is that mass physical training of children is not satisfactory for such cases.

### Differential Diagnosis of Gall-Bladder Disease by Means of the Graham Test

As stated by Drs. W. H. Stewart and H. E. Illick, of New York City, in *Radiology*, Oct., 1931, patients referred for x-ray examination of the gall-bladder fall roughly into three groups:

1.—Those in whom the clinical symptoms are typical, the diagnosis of acute gall-bladder disease has already been made clinically, and there have been attacks of unquestioned biliary colic, the x-ray examination being made simply for what additional information it may yield.

2.—Those with vague, indefinite abdominal distress, whose main complaint is gas, belching and flatulence, with very little pain, in whom the x-ray examination is made with the hope that it will lead to a positive diagnosis or else rule out organic disease.

3.—Lastly, those with no gall-bladder complaint, in whom a thorough search is being made for focal infection or as part of a clinical "work-up."

In the first group, there is only rarely any failure to confirm the clinical diagnosis; but in the second and the third groups the differential diagnosis is more difficult and the Graham test is often of great value. It is in these cases that the clinical history and findings may be very indefinite, while the roentgenogram, when positive, is of real aid in establishing a correct diagnosis. Moreover, while one lesion is usually the cause of the patient's symptoms, especially in acute manifestations, yet in chronic cases there may be two or more lesions. Chronic appendicitis and chronic cholecystitis are fre-

quently associated; so are chronic pancreatitis and chronic cholecystitis or duodenal ulcer with chronic cholecystitis. With such multiplicity of lesions, the history and findings may be extremely confusing, while the roentgenogram gives impartial visualization of the existing conditions.

### Ultraviolet Radiation in 200 Non-Tuberculous Cases

In *New York St. J. M.*, Jan. 1, 1932, Dr. S. I. Muller, Long Island City, N. Y., compares the results obtained in 200 patients with general nutritional, infections or nervous troubles, some of whom were treated by artificial ultraviolet irradiation and others by change of environment, rest, diet, etc.

Climate, environment and vacation, involving changes in humidity, altitude and air, cause improvement in 50 percent. Radiation, involving the use of ultraviolet rays alone, improves 90 percent. In both, best results are secured when proper regulation of activities, diet and habits of living are added. Medication further aids the benefits from either.

In a study of the 50 percent benefited by climate, etc., ten percent are benefited directly by climate, etc., while the balance of forty percent attribute their improvement to these factors, plus, especially, proper regulation of activities, diet and habits of living, to which they are not amenable or are unable to achieve at home. With radiation this is not a prominent factor, since these individuals are at home. Seventy percent of those receiving radiation follow their usual occupations. As against this, change of climate, etc., involves cessation of occupation and disruption of family life in nearly all cases. Change of climate, etc., is particularly adapted to the treatment of those who are easily quieted by unfamiliar surroundings and environment. Ultraviolet radiation is particularly adapted to individuals who desire to retain their usual occupation and mode of living and yet receive medical care. The mental attitude of the individual sometimes indicates the choice of methods.

### BOOKS

#### Kelly and Ward: Electrosurgery

**ELECTROSURGERY.** By Howard A. Kelly, M.D., LL.D., F.A.C.S., Baltimore, Maryland and Grant E. Ward, M.D., F.A.C.S., Baltimore, Maryland. With 382 Illustrations by William P. Didusch and others. Philadelphia and London: W. B. Saunders Company, 1932. Price \$7.00.

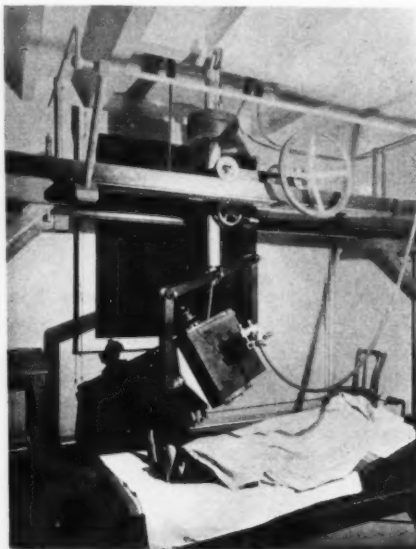
Electrosurgery appears destined to play a leading part in the future practice of surgery, by virtue alone of its own excellence. The appearance of this book is therefore timely and the prestige of the senior author, who was one of the earliest leading proponents of the new method, will ensure its immediate welcome by the surgical profession.

Following a historical introduction, the physics of the electric currents and the details of the apparatus used are expounded. Then follow 15 chapters dealing with the application of electrosurgery in various regions of the body. The treatment of malignant neoplasms by this method receives special consideration and it appears that electrosurgery has advantages over scalpel surgery in this field, in securing better hemostasis by coagulation of tissues and sealing of vessels, by sterilizing cancer cells and preventing their dissemination and by providing a clearer operation field for the surgeon. Most chapters are supplemented by clinical case reports and the numerous illustrations are taken from the same source.

The chapter on the thorax is written by Dr. T. B. Aycock and that on bladder tumors by Dr. H. H. Young.

There is an ample bibliography at the end of the volume. The bookwork is excellent.

### NEWS NOTES



© Underwood and Underwood.

#### Mme. Curie's Radiation Therapy Apparatus

This picture shows the apparatus and general method of preparing the patient for radiologic treatment, installed and in use in Mme. Marie Curie's radiologic laboratory at the College de France, in Paris. The patient's entire body, except the treated area, is covered with lead-rubber sheeting.

## THE · SEMINAR

[NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted. Discussions should reach this office not later than the 5th of the month following the appearance of the problem.]

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

### PROBLEM NO. 6 (UROLOGIC)

Submitted by Dr. U. S. Perret,  
Jeanerette, Pa.

(See CLIN. MED. AND SURG., June, 1932,  
p. 458)

**Recapitulation:** A tall white man, 35 years old, married, weight 185 pounds, clerk in a haberdashery, had gonorrhea at about 17 years of age, the discharge continuing for about one year.

Two years ago he began having chills and fever, pains in the lumbar region and shoulders and a generally "run-down" feeling.

In July, 1931, his Wassermann test was negative; massage of the prostate produced abundant pus, showing many *B. coli* and *S. albus*; roentgenograms show no kidney stones.

He has been treated with silver nitrate irrigations of the kidneys, prostatic massage, hot rectal enemas, various urinary antiseptics, Van Cott's vaccine and an autogenous vaccine. He is better, but the condition does not clear up.

**Requirement:** Suggest treatment.

DISCUSSION BY DR. WINFIELD SCOTT  
PUGH, NEW YORK CITY

This case presents in a striking manner the clarion call for a complete urologic examination. In this case it would be well to know the condition of the urethra. Does pus ooze freely from the prostatic and ejaculatory ducts? Is there evidence of chronic prostatitis, with polypoid masses around the bladder neck? What is the condition of the prostate on rectal palpation; is it hard or soft and mushy? Is one side resistant to touch and does its fellow lobe give a sensation of a bag full of air? In the latter case, the feeling imparted is

that of a finger indenting a feather pillow. Such a condition suggests an old parenchymatous prostatitis, which is really a chronic abscess of the gland.

Chronic abscess of the prostate is one reason why many urethral conditions do not clear up; yet it is a very common lesion. Number Six, with his attacks of chills, is a picture frequently noted in the presence of and suggests such a condition. We are told that the seminal vesicles are infected. This is a frequent association with chronic prostatitis. If very large, they may well cause an interference with the urinary flow through the ureters, thereby predisposing to kidney infection.

According to the reporter, kidney infection is thought to be present in this instance, although there is nothing in the record of examination to substantiate it. In my experience, pyelitis is uncommon in young males, unless due to a surgical lesion. If there is really pus in a kidney, a complete urinary examination of these organs, which must include microscopic study, phenolsulphonephthalein test, pyelograms and ureterograms, is imperative.

Most lumbar pains are really indicative of disease in the prostate gland or seminal vesicles, which must always be thought of first. When a surgical lesion is present in any organ, all the urinary antiseptics in the world will not clear it up, even if given in massive doses. From the brief information available in this case, it becomes apparent that infection may be present in many parts of the genitourinary tract. The most likely location, however, is the prostate.

Doctor Perret tells us that his patient has improved under prostatic massage and hot rectal enemas. I would be inclined to continue this form of treatment, eliminat-



ing the kidney irrigations. One must be patient with this type of case, as treatment is necessarily prolonged. If a chronic prostatic abscess is present, the patient will not get well until it is opened and drained.

DISCUSSION BY DR. E. C. JUNGER,  
SOLDIER, IA.

The former gonorrhea was probably mistreated, resulting in deep infections of the epididymis, prostate and seminal vesicles and laying the foundation for his present kidney infection.

This man should get out of the clothing store and work on a farm. His diet should consist of vegetables, fruit and dairy products, with no meat or fried foods. He should have a thorough implantation of *B. bulgaricus* in his colon, after thorough cleansing of that organ.

The bladder and kidney pelvises should be irrigated with 2- to 5-percent tincture of Metaphen; 2- to 5-percent mild silver protein; or a saturated solution of boric acid, twice a day, at regular intervals, and diathermy and autogenous vaccines should be used. Also, probably, prostatic massage, urethral sounds and balsamic preparations by mouth.

DISCUSSION BY DR. FRANK B. YOUNG,  
LONG BEACH, CALIF.

This man has chronic prostatitis with accompanying infection of the upper urinary tract to a slight degree.

My first impression in the description of this case is that it seems to have been overtreated. It is not advisable to massage the prostate and seminal vesicles more often than once a week, nor is it advisable to irrigate the pelvis of the kidney as often as once a week. I would suggest that prostatic massages be given not more frequently than seven to ten days apart, that they be executed with the utmost gentleness, but thoroughness, and that, following the massage, a 25-percent solution of Argyrol (mild silver protein) be instilled into the prostatic urethra. Irrigation of the kidney should not be performed more often than twice a month, and preferably, in most cases of this type, less often.

In some cases it is possible, by the use of the prostatescope, to find the ducts and irrigate the seminal vesicles directly and, if possible, this should be done following massage. If these procedures prove to be useless, it may become necessary to open

and drain the seminal vesicles through the perineum or to remove them altogether. This is a rather serious operation, however, and should not be performed unless it becomes absolutely necessary. It would be advisable to continue the use of autogenous vaccines for a considerable period, provided they are given in conjunction with prostatic massage or other methods of drainage. Vaccines of any sort are useless in all cases in the absence of drainage.

So far as the kidney infection is concerned, it is my opinion that it can probably be ignored and that it will spontaneously heal when the original focus of infection is eliminated and a free flow of urine is established. If a prostatic bar or other urethral obstruction is present, it should be treated by resection or other suitable procedure.

It is doubtful if any medication, by mouth or intravenously, will have much effect on this infection. The use of foreign proteins to secure a systemic reaction is to be considered, such as sterile milk, typhoid vaccine, or other methods of setting up a febrile reaction. Diathermy, with a rectal or urethral electrode, the indifferent electrode on the back or abdomen, with heat to full toleration for 30 minutes, once in four to ten days, is of value in many cases. The whole matter, however, comes back to the fact that it is necessary to secure adequate drainage of the involved area before cure will be accomplished. Extreme care, gentleness, and easy manipulation, without over-frequent or strenuous treatment, will probably accomplish this result.

CLOSING DISCUSSION BY DR. GEORGE B.  
LAKE, CHICAGO

One of the best features of these *Seminar* discussions is that they call attention to the fact that few physicians are making up complete clinical records before they begin the treatment of chronic cases. Such records are necessary to success.

In this case there is definite evidence of a pus focus somewhere, that is not draining freely, and Dr. Pugh's and Dr. Young's suggestions seem to be entirely valid. I should say that the first thing to do would be to discover or rule out prostatic abscess and, if it is found, to drain it surgically and follow that up with suitable local and general treatment.

In cases of heavy infection of the seminal

vesicles, surgical drainage may be necessary, also; but there is a procedure which had many advocates several years ago, about which we have heard little lately—direct flushing of the vesicles with an antiseptic solution (such as 10 to 20 percent tincture of Metaphen), through the cut end of the vas deferens, severed for that purpose. This operation is a minor one, requiring only a local anesthetic and very little time. The patient need not be in hospital for more than one day at each irrigation (if more than one is needed). The cut ends of the vas can be reunited, if that seems advisable, when the treatment is finished.

I agree with Dr. Young in feeling that Dr. Junger's twice-daily irrigations would constitute overtreatment, in a case like this.

If there is no circumscribed pus collection which requires surgical attention, or after that attention has been given, I should be inclined to treat this patient, on the basis of nonspecific leukocyte stimulation, as advocated by Dr. Young, with intramuscular injections of sterile, fat-free milk (Lactigen), in doses of 5 to 10 cc. every 2 to 4 days, or intravenous injections of 10 cc. of 1:1,000 Metaphen solution, daily or every other day for several doses, or of 1:1,000 hydrochloric acid solution, 5 cc. daily or every other day, after the technic of Ferguson, of Birmingham.

If the infection can be localized, diathermy treatments, properly applied, ought to help. Perhaps general fever therapy, by diathermy or by intramuscular injections of sulphur in oil (see CLIN. MED. AND SURG., Apr., 1932, p. 246) might be use-

ful. Cases like these tax the skill, resourcefulness and patience of any physician.

#### PROBLEM NO. 8 (SURGICAL)

PRESENTED BY DR. M. O. ROBERTSON,  
BEDFORD, IND.

A man, 28 years of age, married 3 years and having no children, presents himself with the following history:

He has never had any serious illness. About 2 years ago he had gonorrhea with epididymitis, which was only moderate in severity. He considers himself entirely well of this disease, and does not connect it in any way with the present trouble. About 18 months ago he began to have pain in his left inguinal region, which became so annoying that he consulted a prominent physician in his community, and was told that he had a varicocele, for which the physician operated, but the pain was not relieved. Then the same physician removed his left testicle, but the pain was still present and of the same character as at first.

Examination revealed a man 5 feet 5 inches tall, weighing 125 pounds. The physical examination was negative, including blood count and urine analysis. There was no enlargement in the inguinal region and only very slight tenderness—in fact, so slight that I doubted if it was more than normal sensation—but there was, I felt reasonably sure, a slight enlargement of the inguinal opening, and nothing else.

*Requirements:* What causes the pain? What, if anything, can be done to relieve him?

---

#### PETER RUGG AND HIS HORSE

Many persons, even those who have definite ideals and know exactly where they want to go and what they want to do with their lives, never arrive at their destinations. They are like Peter Rugg, a character in a story written in 1824, who for over fifty years drove his horse at a clip of twelve miles an hour but never reached Boston. He was always getting on the wrong road or was receiving wrong directions from people of whom he made inquiries. For instance, he would follow the Connecticut River to Hartford, under the impression that the river was the Merrimack and the town Newburyport. Some malicious influence over which he had no control kept Peter Rugg away from Boston, in spite of all his efforts to reach that destination.

Some men in business (and also physicians—ED.) have much the same experience.—Hotel Guest.

# A LIVING FOR THE DOCTOR

## THE DOCTOR'S LIVING

WE have no means of knowing how Imhotep, Asklepios and Father Hippocrates collected the living which was due them for the valuable services they rendered to their communities and to the world; but since the two former personages were considered as gods (at least after they died) and the latter was almost in the same class, it seems probable that they were supported from ecclesiastical revenues which, so far as we know, have always been ample.

As a matter of fact, the physicians were, very commonly, also priests up to as late as the twelfth or thirteenth century A.D., and even when they were not they were in a class by themselves—ministers and public servants, who lived upon the bounty of the grateful ones whose sufferings they had relieved.

During the Middle Ages, physicians were so rare that their services were not available to all and sundry, but were reserved for the lords and barons, who retained them as members of their households, as they did a chaplain and a court fool or jestor, so that their economic status was never a matter of doubt or conjecture.

When those days passed and doctors became sufficiently common to be able to practice as individuals, they were still people set apart, ministering to the needs of whosoever consulted them and accepting whatever fee was tendered to them, as an "honorarium," rather than as a clear-cut indebtedness on the part of the patient. This attitude was well nigh universal in the medical profession up to the latter part of the nineteenth century and still colors the thinking of a large number of physicians, particularly the older ones, so that they are unable or unwilling to look

directly and openly upon their professional work as the source of their income, as well as a service which they render to humanity.

A generation or two ago, this way of looking at the matter was reasonably satisfactory, from an economic standpoint, but it is no longer so. The people of the twentieth century tend, more and more, to estimate all values, even that of success, in terms of dollars and cents, and it is time that those physicians who have to depend upon their professional labors for a livelihood were readjusting their outlook to the standards of these days, rather than to those of a bygone time, if they hope to maintain the place in the fabric of society to which their accomplishments would justly entitle them.

Physicians are, therefore, faced, much against the will of most of them, with a set of pressing economic problems, which they must solve, individually and collectively, in some reasonably satisfactory way, unless they are able to face with equanimity the prospect of being absorbed into the politically governed machine known as State Medicine.

### WHAT IS A LIVING?

A living from the practice of medicine means more than the receipt of enough goods or those tokens of value received, exchangeable for goods, which we call money, to keep body and soul together, for the physician is and should be considered a member of the highest intellectual and social class in his community and is under a certain obligation to live in a manner befitting his position.

The doctor's living, then, signifies a sufficient income to provide him with a reasonably comfortable and convenient

home and office, an adequate and well balanced diet and suitable and slightly clothing for himself and his family; money to educate his children satisfactorily and to keep up the progress of his own education; seemly and mechanically correct means of transportation; and enough to provide for the maintenance of his family, in case of his untimely death, or to enable him to enjoy periods of leisure and relaxation throughout his professional career, and to spend his twilight years in the pursuit of those avocations which have claimed his interest and enthusiasm during his youth and early maturity. This may seem a full program, but it is certainly not an excessive one, and every physician should set it before him as a minimum of achievement.

In order to bring such an ideal into reality, the doctor must first earn a sufficient income; then collect it; and then spend it in such a way as to extract the most richness from daily living, while setting aside a definite sum each week or month (in the form of life insurance and other sound investments), to provide a fund for the support of his family, in case of his death, or of himself when he finds that he is no longer able to hold his own with the younger men, or is discovering that his zest for his professional work is flagging, so that he approaches his duties by an effort of will and without the eagerness which is a characteristic of those who have won a large and enduring position among their confreres and with the lay members of their communities. When that time comes, if it ever does, the physician should be in a financial position to retire from active practice and devote the rest of his life to the cultivation of his mind and soul and the enjoyment of the fruits of his earlier endeavors.

#### HOW TO GAIN A LIVING

The doctor who is unable to earn a living has probably fallen into that distressing situation by getting into a rut and failing to work his "acres of diamonds." People will no longer pay a physician gladly just for looking profound and passing out a casual prescription or box of pills. They want to feel that something is really being done for them. Moreover, the practitioner who sends all his minor operative work to self-styled or fully qualified surgeons, is closing his door upon some

of his most remunerative patients, whose maladies he could treat perfectly satisfactorily, if he is not too lazy or too sunk in routine to do some months of real, sincere study. To gain a living we must first really *earn* it.

The man who works consistently, sincerely and intelligently to benefit his patients may, because of certain circumstances, never become wealthy, but he will be sure to earn a living. If one finds that minimum income in danger, it will be well to sit down alone with those three adverbs and honestly answer the question, whether or not they all apply to one's professional conduct. If they truly do, the trouble lies elsewhere—probably in collection or spending or both.

Methods of doing business have changed immensely in the past generation or two, but it seems probable that doctors have done less than almost any other group of people, in the way of changing their business methods to meet the new standards.

The man whose livelihood depends upon the practice of his profession may find that he needs a new business outlook even worse than he needs a new automobile or diathermy machine. He will have to learn something about credit ratings, financing companies, flat and annual fees, collection methods and record keeping. He may have to come, in self defense, to the outspoken realization that people are no more entitled to free medical service than they are to free groceries, coal or rent, and demand his share of the millions of dollars which are being disbursed by charitable institutions for the relief of the destitute.

When one begins to talk of spending, the discussion becomes rather personal, but it cannot be shirked, because it is an integral part of the subject of gaining a living. Nor is it merely a matter of spending money, though that is the most critical point. We must consider how we spend our time (for that is the stuff of which life is made) and our energy (for that is the agency by which increment is gained), as well as our dollars. Here is the reef upon which many a good financial ship has gone aground. Remember, the key words are: *earn, collect, save*. These are the principles which this Department will endeavor to develop in a practical way.

The world is going through a trying period. Scarcely a man or woman has escaped the pressure of the economic situa-

tion. If we look upon distress, difficulties and even real suffering as instruments purely of destruction, they will surely lead us to poverty, disease and death. But if, like a wise patient, we recognize pain as merely a symptom of some more or less vital disorder and then, as wise physicians, proceed to diagnose the malady and apply the proper treatment, even if it hurts at the time, we shall be on the way to recovery.

If we look upon discomfort and privation as millstones, we may well be ground

between them; but if we recognize them as goads to stir us, by the keen desire for the good things we are missing, out of our ruts and complacency into stronger and more intelligent efforts to ameliorate our condition, we will come, ere long, to see that these circumstances are like the harsh words of the coach or trainer, which spur a football team or a boxer to the effort which snatches victory out of what seemed to be inevitable defeat.

G. B. L.

## Physicians and Contracts\*

By I. S. Trostler, M.D., F.A.C.R., F.A.C.P., Chicago

**P**HYSICIANS are interested in contracts from many and varied aspects, and it will be my purpose to call attention to a few of these and to discuss our interests in some of them.

It is a fact, that we are so much involved in contracts, that *we cannot write a prescription, visit a patient in the home or hospital, consult with other physicians or perform any medical act without coming within the application of the laws governing and regulating contracts.*

### DEFINITION

A contract is an agreement or covenant between two or more persons, in which each party binds itself to do or perform certain acts or to abstain from doing or performing certain acts, and in which each party acquires a right to what the other party or parties agrees to do or not to do.

Contracts may be in expressed and (or) written terms, or implied from the acts of the parties thereto. They may be oral or written, and both kinds are equally binding and valid, provided all the parties thereto are of sound mind, lawful age and the act or acts contracted for are not contrary to law or public policy; that the contract is founded or based upon a consideration, either of money or some other valuable quid pro quo, with exceptions which will be noted later; and if they are not obtained through fraud, misrepresentation or compulsion.

Contracts may involve the conduct of

persons, affect property or affect both personal action and property.

### IMPLIED CONTRACTS, INTO WHICH ALL PHYSICIANS MUST ENTER

When we enter the practice of medicine and undertake to treat patients, we enter into an implied contract with each patient:

1.—That we possess a reasonable degree of skill and knowledge to properly diagnose and treat the ailment or disease.

2.—That we will apply that reasonable skill and knowledge with due care and diligence.

3.—That, in all cases where there is room for doubt, we will use our best judgment.

Failing in any of the requirements of that implied contract, which is created for us by law, we may be held liable, just as much as if the contract was an "iron clad" written document, to which we had affixed our hand and seal, sworn to, etc.

Practically all suits for malpractice against physicians are based upon this implied contract or some of the above named items of it. Consequently, this is one of the most important forms of contract that physicians are, or should be, interested in; and while most malpractice suits are brought as tort actions, it is really because the law creates this implied contract for us, that these suits are brought against us for negligence, injury and improper procedures, and damages are sought for wrongful medical services.

A recent decision from the Massachusetts Supreme Court, states: "Any act of mis-

\*Presented before the North Side Branch of the Chicago Medical Society, May 5, 1932.



conduct or negligence on the part of a physician in the service undertaken by him is a breach of contract, which gives rise to the right of action in contract or tort, against which the statutory period of limitation begins to run, from the time of the misconduct or negligence, and not from the time when the actual damage results or is ascertained."<sup>\*</sup>

#### LIABILITY OF FIRMS AND PARTNERS

The liability of a member of a firm of physicians rests substantially upon the same basis as that applying to partners in general. The general rule of law is, that a partner can be held responsible for the acts of his co-partner, upon the broad principle of agency; that is, if one of a firm of physicians performs an act within the scope of their common business or vocation, each member of such firm will be liable therefor, be such act one of commission or of omission, and whether such partner or partners may have participated in or known of the act or not. Where, however, a member of such firm goes clearly outside of the legitimate limits or scope of the partnership business in committing a wanton, wilful or criminal act—one that it would be almost against all reason to suppose that his partners, even by implication of law, would have consented—the offending partner alone is liable.

#### CONTRACTS TO CONTINUE TREATMENT

Another implied contract assumed and entered into by physicians is the one in which we agree to render medical services to individuals; we agree to continue such services until the contract is completed or is concluded by one or both parties thereto. In other words, if we agree, even by implication, to attend a person needing or desirous of having medical attention, we must continue to render such services until either, in our opinion, such services are no longer necessary or the patient discharges us or some other definite arrangement is made for the cessation of our services. There are numerous and various deviations and modifications of this, cited and expressed in the hundreds of Supreme Court decisions from all parts of this country and from every State in the Union.

#### PATIENTS CONTRACT TO PAY

Another important implied contract,

into which physicians enter, involves our patients more than it does us. This is, that our patients, their guardians or estates contract to pay for our services, even if the subject of fees is not or has not been mentioned. Such fees are to be the usual and customary charge for similar services, rendered to persons in similar or equal financial circumstances, in like or similar locations and taking into consideration the degree of responsibility assumed and the distance travelled by the physician making the charge for the fee.

There is, however, a very important exception to this relation, which must never be overlooked nor lost sight of, and that is regarding the kind of services the physicians render. *It should always be remembered that, no matter to whom the services are rendered, whether the patient be prince or pauper, we are expected to render the same high quality of services, and that a charity patient is legally entitled to the same character of services as is a millionaire.* While this is really not a part of this discussion, it seems most fitting to inject it here.

#### ATTENDING UNCONCIOUS PATIENTS

Another important and frequently overlooked particular in regard to our relationship with patients arises when physicians undertake the care of unconscious persons, in the absence of any one properly authorized to employ them. Here the law creates a sort of fictitious contract which, however, becomes a real contract as soon as the patient becomes conscious and authorizes or implies that the physician continue his attendance. In the event that the patient immediately discharges the physician, it is, of course, equivalent to a denial that any contractual relationship has ever existed.

#### WRITTEN CONTRACTS

While contracts regarding the relationships of physicians with their patients are the most important and numerous, our next most important contractual relationships are with insurance matters—particularly malpractice insurance matters; collection of our fees; purchasing of property, apparatus, etc.; employment by others and employment of others by us. These are, as a rule, and should always be written and should contain specific and definite stipulations so that no misunderstandings or misinterpretations should occur.

<sup>\*</sup>Capucci vs Baronne, (Mass.) 165 N. E. R. 653, 3/28/1929.

### MALPRACTICE INSURANCE CONTRACTS

We buy and pay for malpractice insurance contracts or policies in order that we may be protected against suits brought against us for torts (wrongful acts), negligence, property damage, breach of contract, loss of services or companionship, etc., and the insurance contract which does not cover all of these, besides having other necessary qualifications, is not worth buying and paying for.

A satisfactory and properly worded contract for malpractice insurance should state, in clear, definite and unmistakable language, all the conditions under which it operates, and what it insures for and against. It should agree to defend, up through and including the courts of last resort, and to indemnify for all expenses incurred in such litigation, *pay all damages assessed* (up to the limits of the principal sum of the contract) against the insured, his heirs and estate, and *should cover every and all professional services rendered by or for the insured by anyone, from any breach of professional duty whatsoever*. It should include suits for "return of fee" cases, criminal negligence, property damage, etc.

The organization furnishing the contract for malpractice insurance should be one which has a large and extended experience in defending malpractice suits, have a large and competent corps of malpractice experts and be willing to advise and accept advice, in the defense of all tort and breach of contract cases of all sorts and variations which involve physicians.

Financial strength is, of course, an important desideratum, but in my opinion not the most important one, ability and knowledge of how best to defend, occupying the first place, in my estimation. This latter can, of course, be acquired only by experience and the training of adequately competent attorneys and advisors, and the possession of an efficient library for immediate reference, including files of important relevant decisions.

The organization furnishing such insurance contract must not be a mutual, reciprocal or inter-insurance type of association or company, wherein the insured helps to carry the insurance risks of other physicians, or in which other physicians in practice carry or help to carry our insurance.

Like nearly all high-quality things in this world, this sort of highest quality of malpractice insurance is naturally not the

lowest in price. Rolls-Royce quality cannot be purchased for Ford or Chevrolet prices, and we have no logical right to expect that it can. It is true that some of us have to be satisfied with many articles of somewhat inferior quality, because of the high price; but when it comes to purchasing malpractice insurance contracts, we should not be satisfied with anything short of the best on the market, regardless of cost.

Any kind of malpractice insurance is good enough as long as we have no suits filed against us; but the moment one of these sleep-preventing, tormenting, aggravating suits is filed (or even threatened), the satisfaction of knowing that we are completely and entirely protected by an adequate contract gives us "That grand and glorious feeling."

Our professional reputations, which are by all means our most valuable possessions, are veritably in the hands of our insurance carriers, and unless these organizations are able and willing to protect us to the limit, we are at the mercy of that worst of all, meanest of all human parasites, the charlatan quack lawyer. So again I say, *the best is none too good*—and by "good" I mean a completely-covering, adequately broad and liberal malpractice insurance contract.

### COLLECTION AGENCY CONTRACTS

Another contract which should interest physicians more is the collection agency contract or agreement. So many of these are so one-sided, in favor of the collection agency, that if they had their just dues they would be unable to secure the signatures of reputable physicians to them and they would not receive a single bill to collect.

It is a surprising fact that nearly all of these contracts have some trick clause or paragraph that proves to be a catch, trap or subterfuge, which leaves the unwary signer in a dilemma, such as having to pay for something he did not get or some other similar unpleasantness. Among these catches are: failure to state definitely the time limits regarding the privilege of the physician or debtor to withdraw claims from the collection agency; confusing and complicated terms, some of which make it more profitable for the agency to collect claims in small amounts or to hold claims until they are old enough to pay larger collection fees; inability of the physician

debtor to withdraw any claims without payment of collection fees; charges for collection enforceable if physician does not do certain inconvenient or impossible things, etc.

We should be exceedingly careful when signing collection agency contracts, so that we do not acquire another troublesome or "dead beat" debtor. I know of an instance where a physician paid an agency \$14.00 in cash for "costs," and when finally the collection agency did get a judgment for the amount of the claim and the judgment was paid, the agency presented a bill for \$12.50 for their commission, leaving the physician "out of pocket" \$1.50.

#### CONTRACTS INVOLVING PROPERTY

Contracts involving property are frequently of considerable importance to us. When a physician buys the practice of another, usually little or no difficulty arises relative to the physical property transferred. The practice and that impalpable, vague thing called "good will" is more often the cause of differences and litigation in this type of contractual transfer of property. The reason for this is, that patients are not really transferrable like chattels, and many of them insist upon returning to the seller of the practice at the first opportunity.

Contracts between the purchaser and seller of a medical practice may be written so that they will "hold water," but they must be carefully worded. It behooves the buyer to have such a contract prepared by a most erudite and reliable legal expert on contracts, and have it stipulated therein that the seller of the practice furnish a suitable and ample indemnity bond to comply with all the covenants and specifications contained in the contract.

#### EMPLOYMENT CONTRACTS

Employment contracts may be written so as to have ample "loop holes," so that employers of physicians and others may abrogate, void or annul any or all of their provisions, whenever the employers desire to do so.

It is important to the employee physician, in order that the legal relationship of employee and employer be recognized, that the employer voluntarily accept and acknowledge the relation of master and servant. By this relationship, the employer assumes the responsibility and liability for the wrongful civil acts of the physician

(employee), if third parties are injured.

It must be admitted that this is not the usual legal finding in regard to physicians employed by other than physicians, but it should be the aim and purpose of physicians so employed to have this provision included in their employment contracts. It should be made clear that he is to become an employee and is not to act as an independent contractor. This is most important in the event that the physician employee is injured while he is on duty or as the result of his employment, whereby he may come under the Workmen's Compensation Law.

In addition to the advantages just mentioned, if the physician is legally and contractually recognized as an employee, he would not be held liable for the acts of his assistants; whereas, if he were not so recognized and acknowledged, he must act as an independent contractor and be held liable for the wrongful civil acts of those under his direction.

Here again, a competent attorney will be well worth what he costs. He may charge a considerable fee for drawing a contract, but it will pay. I have had considerable experience in this particular. In one instance, a fee of \$50.00, paid to a good legal advisor, supplied me with a contract that saved me hundreds of dollars.

#### CONTRACTS TO PURCHASE

The present-day wave—or shall I call it tide—of buying on deferred or partial payments makes it very important that all who buy on that plan should most carefully scrutinize and digest every word in contracts for such purposes.

It should be clearly understood that there is a wide and important difference between

- 1.—Buying or purchasing
- 2.—Agreeing to buy or to purchase
- 3.—Agreeing to order
- 4.—Securing an option to buy or purchase.

If the difference between the foregoing four items is carefully analyzed and understood, there should be no difficulty; but if this is not understood, there will be plenty of trouble to the signer of the contract unless he has his eyes wide open. If an ostensible buyer signs a contract agreeing to buy, and after making one or more payments on his purchase, he finds that he has not really bought at all, the awakening may be rude and sudden. He

will find that he has really no property rights in his ostensible purchase, irrespective of whether he has assumed or been given possession of the property, goods or whatever is so purchased or believed to be purchased, or not.

The only way that the party to a contract or agreement to purchase, can acquire a legal title to property which he has agreed to purchase, is by paying all of the purchase price. He has no recourse or legal rights to retract and cannot legally return the property, goods or whatever is so contracted for, and if he fails to pay in full or defaults in any of the payments, the seller can repossess himself (because he owns it) and the purchaser has no right to claim any of the money paid on account. He must lose all that has been paid, or pay the price.

Briefly, the only way to avoid such pitfalls is to *buy*, and *not agree to buy*, and to scrutinize the wording of the contract most carefully for the "pickaninny in the woodpile." It is always best to refrain from signing any contract or agreement having indefinite, equivocal, vague or indeterminate provisions. Sign only such documents as have clear, definite and unmistakable phraseology.

Another, and exceedingly important injunction, which should be most strictly observed and adhered to is, *never cross out, erase or delete any objectionable phrase or portion of a printed form or contract.* If the contract offered contains objectionable or undesirable provisions or conditions, and you want to enter into a contract with the parties in spite of the objectionable form they offer, *have an entirely new contract written to suit you; but do not make changes in an objectionable contract.*

The foregoing holds true in regard to

agreements to order but it is far safer and better not to agree to order at all and to wait until ready to *buy* instead of *agreeing* to buy anything.

#### LEASES

Leases for office or residence property, like other agreements, should be carefully studied before affixing the signature. They should definitely and completely specify, in the body of the document, all of the important particulars of the agreement.

For the protection of the lessee, they should specify the obligations of the lessor as to the upkeep, repairs, etc., of the property leased; the time allowance for reconstruction or repair in case of fire or other injury to the property; assignment of the lease; whether the lessee may remove detachable improvements that he has added or whether the lessee is to be reimbursed by the lessor for such improvements as become an immovable part of the property.

It is usually advisable for the lessee that a clause providing for a renewal of the lease be included.

Leases are important contracts and should receive as much watchful attention as they merit.

Because of present-day business methods and the decrees of governmental and social demand, physicians and practitioners of the healing art must come under the jurisdiction of the same laws as does the business and commercial world. This is because the laws of the land, governing contracts, are of decided importance to our profession in a broad and diversified sense, so that it behooves all of us, for our own protection, to look well into the propriety of the relation between physicians and contracts.

812 Marshall Field Annex.

## NOTES AND ABSTRACTS

### Social Insurance Undermines National Character\*

**P**ARASITISM is, today, the corroding canker of modern civilization, and anything which favors its growth and dissemination should be unequivocally condemned and most vigorously opposed.

\*This is the seventh of a series of articles on Social Insurance.

The proponents of compulsory health insurance or national insurance, as it is called in England, reiterate again and again that these and the dole are totally different. In name and administration, yes; in effect, no. They both encourage people to want something for nothing or much for little which, in effect, makes parasites out of them.

Almost endless illustrations supporting

the statement that compulsory health insurance and the dole are alike in effect could be produced but one will have to suffice. Liek, in his book, recounts the following experience he had while a *Krankenasse* physician in Germany: A middle-aged man came to him for an examination, with the view of securing sick benefit. Liek examined the patient carefully; could find nothing the matter with him; in fact, found him an unusually well-developed and robust individual. He told the man the facts and elicited the following story. The man told Dr. Liek that he was the only man in his village that did not get some kind of a government stipend, sick benefit, dole or pension and that everybody was ridiculing him because of this.

No one who is at all familiar with Bernard W. Shaw's writings will ever accuse him of being in favor of the present economic system in England. He has the following to say about the dole: "The Labor Party has just twisted conditions all around. They tax people who live on unearned income, and create their own leisured class—people who live on the dole. The dole is not much but, if you have four or five in one family living on dole, you have a hostel of leisured people living very well. That must cease."

The whole social insurance scheme is based on the ethically indefensible theory that individuals are entitled to things that they have not earned and on the politically unsound doctrine that society owes every citizen a comfortable living, whether or not he repays society by doing his fair share of the world's work. Under compulsory health insurance the individual who works only half-time is entitled to just as much free medical service and is likely to get much more in sickness benefits than he who works full time. Not only this; it actually encourages immorality and riotous living as the following personal experience well illustrates:

As a young man I worked two seasons in a lumber camp. The camp in which I lived comprised between thirty-two and forty men. Of this number only one did not use intoxicating liquor; only two did not use tobacco; and half of the men spent their hard-earned wages either at the saloons in the nearby town or went regularly to the "Island" or did both. Those

who are familiar with the islands of the upper Mississippi River need no explanation as to why they went there. I wonder how health insurance, insuring these men for loss of time and providing free medical care for them, would have prevented their doing the very things which were the cause of much of their sickness. For my part, I believe that a larger percent of them would have gone to the "Island" if they had felt that they would be protected against loss of time and that they would receive free medical care if they became sick. Health insurance would actually have increased, not only sickness, but immorality as well in this camp.

A recent survey of 5,000 students at the University of Minnesota found only ten, or two per thousand, with positive Wassermann reactions. Careful surveys in various parts of the country indicate that about three percent, or thirty per thousand, of the general population of the United States is syphilitic. A Wassermann examination of three thousand prisoners in the Southern Illinois Penitentiary revealed the fact that three in ten, or three hundred per thousand, were syphilitic. This same ratio undoubtedly pertains to the class most criminals come from and raises the average in the general population.

It is a well-known fact that alcoholics and those suffering from venereal diseases are much more liable to loss of time from sickness than are those not so affected. What right has any just government to take of the earnings of the two first groups without their consent and give them to the third group? A just and humane government protects the weak from oppression and exploitation by the strong and unscrupulous; but a just and wise government does not penalize the strong, industrious, clean-living and thrifty and favor the weak, lazy, shiftless and immoral. Giving the weak, lazy and shiftless undue advantage over the strong, industrious, and thrifty actually penalizes and handicaps the latter, interferes with the law of "the survival of the fittest," and must eventually lead to race degeneracy. If the white race persists in this course long enough, the "yellow peril," so often glibly and jokingly mentioned, may become a real menace to Western civilization.

All independent writers on the subject state, and even the proponents of com-



pulsory health insurance have to admit, that it has tremendously increased occupational neuroses, and that is just what was to be expected and *was* expected by those who know human nature and can see just a little further than the ends of their noses.

The following quotation from a paper by William H. Hicks is pertinent: "In accident cases, where the question of compensation is involved, conditioned reflexes are sometimes created by the patients' environment that, not only retard recovery, but instigate additional symptoms or may lay the foundation for successful malingering."

One of the worst features of compulsory health insurance is that, if continued long enough, it will crush out of character the three capital I's—Independence, Industry and Integrity. Such schemes are, as Guglielmo Ferrero, the eminent Italian historian, rightly says, "artificial," and "while they tide over trifling evils of the moment they lay up for the future troubles and difficulties and dangers of infinitely greater gravity."

EDWARD H. OCHSNER, M.D.,  
Chicago, Ill.

### Count Your Change

**A**N editorial in *Collier's* for July 9, 1932 is worth pondering when we think that the bottom has fallen out of everything. Here are some of the facts there presented:

America's Mutual Savings bank deposits are \$1,233,000,000 more than they were three years ago.

Total bank savings, today, exceed \$29,000,000,000—more than \$1,000 for every family in the country.

Our total stock of gold is \$4,000,000,000; and there is \$5,464,000,000 of currency in circulation.

Last year \$16,500,000,000 worth of new life insurance was written in the United States.

The people of this country own 25,800,000 automobiles—nearly one to every family.

The average weekly attendance at the movies is still 75,000,000; and the annual candy consumption has not fallen below the mark of a billion and a quarter pounds, set in 1929.

A number of other points are mentioned, but these are enough.

These things being true, it is evident that the trouble is not with the country, but with the people. It looks as if somebody were "gumming the game," and, if so, we are the people to find out who the gummers are and make them turn loose. If we don't nobody will do it for us.

National elections are coming in the autumn, and it is the duty of every good citizen (and that should include every physician) to study the candidates and their policies with the utmost diligence, to find out all he can about what is going on below the surface of our industrial, political and financial life, and then to go to the polls and vote, as each man's conscience and intelligence gives him strength and wisdom. If not, our blood will be upon our own heads.—Ed.

### Preventive Medicine in General Practice

**G**ROWN men and women are not, as a general rule, receiving the supervision and guidance that is in any way comparable to those received by babies and children. It is in this field of personal or private living and environment that one looks to see the advances of preventive medicine, and here the general practice of medicine must play an important part. It must, from its knowledge, investigations and experiments, give more information concerning the effect of the various habits and environments on the maintenance and betterment of health.—DR. R. L. LEE, of Boston, in *J.A.M.A.*, June 11, 1932.

### Collecting Medical Fees

A study of the various methods of collecting overdue medical fees, by Dr. R. G. Teland, Director, Bureau of Medical Economics of the A.M.A., in *A.M.A. Bull.*, Apr., 1932, leads to the following, among other conclusions:

Modern ethical business methods will, in most instances, prevent rapid deterioration of accounts.

Extraordinary caution should be exercised in choosing a third party with whom to entrust collections.

Contracts are considered undesirable and unnecessary by leaders in the collection business.

Before signing any list or document or alleged authorization for an agent to start collections, the physician should examine the document very carefully or submit it to an attorney for an opinion. The paper may be a one-sided, vicious contract which sometimes extorts from the physician more money than it brings in.

The personal investigation method of collec-

tion, if honestly done, is usually more satisfactory, and at the same time more costly, than the mail method.

The refund guarantee clauses of some systems may be so worded that the physician has difficulty in securing a rebate. "Trick phrases" in the contract and requirements almost impossible of fulfillment save these companies the trouble of refunding.

Finance companies offer no methods superior to those used by ordinary collection agencies.\* Their methods raise the cost of medical care to the patient, and the physician is often required to assume responsibility for payment of the patient's note.

Before organizing a mutual or county medical society credit bureau and collection agency, physicians should determine the legal requirements surrounding the establishment and operation of such institutions.

If it seems desirable to apply commercial collection methods to the collection of medical accounts, physicians should remember that not all nation-wide collection agencies are "shady" but many "shady" agencies are nation-wide. More satisfactory results, to both physician and patients, may be expected from the use of a local collection agency, over which some influence and control can be exercised.

### Consultation Service for Patients of Moderate Means

As reported by Dr. G. Baehr, of New York, in *J.A.M.A.*, June 11, 1932, the Mount Sinai Hospital of that city has established a consultation service to aid patients of moderate means and restricted to such patients, referred to it by their family doctors. It is designed as an aid to the physicians of the community in the investigation of patients with clinically obscure conditions, in order to establish a diagnosis.

The service is organized, staffed and administered by internists, surgeons and specialists who are members of the visiting staff of the hospital proper; it functions as an independent, detached unit of the hospital; the work is limited exclusively to diagnosis, no therapy being practiced.

On completion of the thorough clinical investigation, the patient is promptly returned to his family physician, who receives the diagnostic report.

A flat fee of \$35.00 is split between the consultants and the hospital.

At the present time this service is somewhat in the nature of an experiment for the benefit of physicians and patients.

\*This may be true of some finance companies, but we believe that a careful, impartial investigation will convince any open-minded physician that these companies, when well managed, are rendering a real and much needed service to patients, as well as to physicians.—Ed.

### "Flat Charge" Surgery

In *Med. Economics*, Jan., 1932. Dr. G. B. Lake, of Chicago, remarks that, apart from the emergency work which follows accidents, seventy-five percent or more of surgical operations are planned for weeks in advance and some sort of financial arrangements suitable to the patient's means, are, or ought to be, made before the patient enters the hospital.

There is no reason why the financial side of medical services should not be discussed as frankly as the physical side by the physician and patient. It should be quite possible for a hospital to estimate a flat rate for all ordinary operations, based on average cost of similar conditions, to include all hospital and technical charges. With this and the surgeon's fee fixed, the patient would know exactly what the whole charge would be and that there would be no extras. Hospitals which will make such business arrangements *beforehand* will be those which have satisfying professional and economic success in the future.

### Contract Practice

In *J.A.M.A.*, Mar 5, 1932, Dr. R. G. Leland, Director of the Bureau of Medical Education of the American Medical Association, summarizes the present aspects of contract medical practice as follows:

- 1.—Took its origin largely from necessity;
- 2.—Has been legalized, in certain places, by state statute;
- 3.—Under certain conditions and in some forms is both ethical and legitimate;
- 4.—In general, has become highly commercialized and competitive;
- 5.—Is largely limited to the pay-roll class;
- 6.—Does not, in most cases, extend its provisions to women and children;
- 7.—Concerns itself, almost without exception, to curative medicine and does not include preventive measures;
- 8.—Shows no interest in public or individual welfare;
- 9.—Furnishes medical care which is often inferior in character;
- 10.—In many instances is characterized by underbidding, subletting, misrepresentation and racketeering;
- 11.—Is economically unsound in many of its present forms;
- 12.—Is essentially sickness insurance, usually not supervised or regulated;
- 13.—Is often used by the operators thereof to influence legislation in favor of extension of the plan;
- 14.—In many of its present forms, lowers the confidence of both the individual and the public in the medical profession;
- 15.—Has some features that deserve refinement and extension and others that are unethical and dangerous and should be abolished.

# CLINICAL · NOTES

## AND

# PRACTICAL · SUGGESTIONS

### Gastrointestinal Allergy

**F**OOD allergy is becoming more and more recognized as a factor in many pathologic conditions, such as urticaria, angioneurotic edema, asthma, hay-fever, migraine, headaches and disturbances of the gastrointestinal tract. The symptoms simulate appendicitis and gallbladder disease so closely that, in all these cases, the possibility of allergy should be eliminated before operation.

Gastrointestinal manifestations of allergy are various and are brought about in two ways: the direct irritation of the mucosa and stimulation of the smooth or involuntary muscle of the intestinal tract and, indirectly, as a part of a general allergic condition, due to absorbed proteins. The symptoms are immediate or cumulative, appearing hours or days after ingestion of the offending protein. In some cases there is a state of allergic equilibrium to small amounts of a specific protein or to several, including pollens. Symptoms are caused only by an overdose of one or a combination of several. Worries or emotional upsets are factors that may increase reactions or precipitate a latent allergic state.

The direct action may be mucosal or neuro-muscular, the symptoms of the former ranging from mere hyperemia to angioneurotic edema and resulting in anything from vague uneasiness or a feeling of fullness to symptoms of obstruction. In the more severe sensitizations, the mucous discharge is often blood-stained, due to surface oozing. Spastic constipation or diarrhea, with or without cramps, may be present. This form of allergy is a frequent cause of so-called mucous colitis.

In the neuro-muscular type there is a spastic reaction of the musculature of the entire intestinal tract, with tenderness over the entire abdomen or limited to the accessory organs, such as the gall-bladder or appendix, with localized points of tenderness over these areas. Milder reactions may merely produce reverse peristalsis, causing "heartburn," regurgitation and nausea, with or without vomiting.

Pruritus ani, especially when small hemorrhoids are present, is frequently due to allergy. The gastric symptoms are indigestion—heaviness, with distension and belching—and tenderness, general or localized, resembling that of gastric ulcer. The mucosa of the mouth and pharynx shows angioneurotic reactions in the form of congestions, either localized or general, extending to the sinuses. The tongue may be coated, associated with a disagreeable and "heavy" breath. Repeated canker sores on the lips or tongue are suggestive of allergy. Puckering or itching of the buccal mucous membrane after eating foods is probably due to a localized allergy.

The associated symptoms are: mental depression, nervousness, recurring rhinitis, sinus congestion and any of the general allergic symptoms. Persons who sneeze several times in succession are probably allergic to something. Acute sensitizations can produce a moderate fever and leukocytosis. Anorexia, especially in childhood, when associated with food dislikes or idiosyncrasies, is frequently of allergic origin. When the offending food is eliminated, the appetite returns, with a general improvement and gain in weight.

The diagnosis necessitates making a complete physical examination, with all laboratory tests, including x-ray studies of the intestinal tract, teeth and sinuses. A complete family history should be taken, in regard to allergic symptoms and food dislikes and idiosyncrasies. Eosinophilia during an attack is one of the clinical manifestations of allergy.

Although skin tests are unreliable, they should be done on all patients, but should be checked with elimination diets. The delayed types of allergy invariably give negative reactions. When the offending food is suspected, the patient is given a diagnostic tablet of the corresponding specific propeptan of Urbach, forty-five minutes before he takes the food in question. If the usual symptoms do not appear, it confirms an allergy to that food.

#### TREATMENT

All digestive disturbances and constipation should be corrected and any sources of infection should be eliminated. If achylia is present, give dilute hydrochloric acid ten minutes before meals and repeat one hour after. To relieve acute symptoms, give synephrin (epinephrin) hypodermically and repeat if necessary. The synephrin is slower in action, but has no disagreeable after effects.

To locate the offending food, a combination of the diets of Rowe, Thornberg and Ellis is used. The patient is given a 10-grain capsule of carmine red, as an indicator, with the first test meal, and when the red color disappears from the stool this marks the date of the beginning of the test. A list of the more common foods is given to the person to be tested and he is asked to check those taken at least three times a week, XXX; those taken at least once a week, XX; and those taken occasionally, X.

From data received from this chart, food dislikes and idiosyncrasies, skin tests and propeptan reactions, a primary diet is prepared of foods which are apparently not allergic to the individual and those least likely to cause allergy. If this diet does not relieve the symptoms, a new one is prepared along the same plan. This diet must be followed absolutely, without additions or substitutions, for from seven to ten days. If symptoms are relieved, one or two fruits

or vegetables are added, and every third day any recurrences of symptoms are noted and checked. The more frequent offenders, such as wheat, egg, milk, chocolate, tomato and potato, are not added until the fourth week.

If the offending food can be easily eliminated, no desensitization treatment is given. The Urbach propeptans have proved so efficient that this is the only method of desensitization used. A therapeutic propeptan tablet of the offending food is given three-quarters of an hour before the consumption of the food producing symptoms of allergy. The time required for complete desensitization varies according to the individual case. Fourteen days usually suffices; if not, treatment should be continued until the food is tolerated.

Where there are symptoms of allergy and no definite food can be located, an anacoline tablet (Prof. Ch. Richet) is given, composed of the peptones of meat, fish, eggs, milk, cereals, beans, etc., one-half hour before meals. This method has not proved so efficient, but is worthy of trial. Where there is irritation of the bowel, a low-residue diet, with pureed vegetables, should be prescribed.

WM. N. SENN, M.D.,

Chicago, Ill.

---

#### Nembutal in Delirium Tremens

IN treating cases of delirium tremens, I have used more than 500 capsules of pentobarbital sodium (Nembutal), of 1½ grains (0.1 Gm.) each, and consider this drug to be the most satisfactory sedative and hypnotic I have found—and I have tried all those in general use.

I sometimes give, at the start, a hypodermic injection of "H.M.C." (hyoscine hydrobromide, gr. 1/100; morphine, gr. ¼; cactoid, gr. 1/60), sometimes, in severe cases, giving two such tablets about bedtime (9:00 or 10:00 P.M.), along with 9 grains (0.6 Gm.) of pentobarbital sodium. Regardless of the dose of narcotic given, the patient will awake at 3:00 A.M., when another 3 grains of Nembutal are administered.

When the patient is continuing the use of liquor, I have given as many as 10 capsules, 1½ grains (0.1 Gm.) each, during

the day, or even more, and then, at bedtime, a hypodermic injection of apomorphine 1/10 grain (6 mgm.), to empty his stomach, followed, as soon as possible, by 3 grains of Nembutal by mouth. If the patient is very violent, he can be controlled by a hypodermic injection of one "H.M.C." tablet, with 1/50 grain (1.3 mgm.) of hyoscine and 10 cc. of a saturated solution of magnesium sulphate.

This "dynamite" therapy discourages drinking for a week or two, during which the patient takes about three 1½-grain capsules of Nembutal a day, to overcome nervousness and craving for alcohol.

Frequent blood counts and urinalyses have shown no abnormal conditions resulting from this medication.

GEORGE H. BARTHOLOMEW, M.D.,  
Los Angeles, Calif.

### Vitamin Witticisms

**S**TUDENTS of vitamins are being made to feel nowadays the gaff of the humorist. Skepticism is a wholesome attitude when it is adopted by a scientific investigator; it makes him demand cogent evidence and rigorous proof for all the hypotheses or claims that may be brought to his attention. The scientific skeptic, if he is true to type, is also open-minded. His proper reaction is that of forming an opinion or formulating a judgment, rather than merely "changing his mind." The scoffer is all-too-often quite indifferent to the rigorous demands of logic. Two decades ago the scoffers cried that "what we need in this country is food, not calories." When, a few years later, it became likely that food would win a war and that caloryielding foods were "fuel for the fighters," the humorist failed to find an appropriate theme in the calory concept.

Today the vitamin hypothesis supplies a profitable theme for the columnist. He demands more evidence for the existence of the postulated food potencies. If they are real, why don't the chemists exhibit them, as they do salt and sugar? Such frivolous presentations of scientifically serious subjects have some wholesome aspects. The vitamin hypothesis, which still presents analogies with magic because it represents the unusual or unexpected in routine experience, has become something for the false publicity seeker and the food faker to conjure with. Vitamins have become the

vague talking-points in the promotion of cure-alls and panaceas for health. Furthermore, modern advertising has all-too-often presented a dire picture of vitamin starvation among the population and has ventured to arouse the fear of untoward consequences unless immediate steps are taken to supply the lacking essential. One might almost conclude, after reading some of the billboards or newspaper columns, that America is the home of a nation living exclusively on polished rice or corn starch or gelatin or olive oil. Hence salvation is to be acquired only through the purchase of this or that proprietary vitamin preparation. The pictured cure is as dramatic as are the actual experiments with animals existing on such extremely one-sided diets. Fortunately the average American diet affords little justification for the assumption of widespread starvation with respect to any dietary requisite.

The ridicule of the vitamins as the *pièces de résistance* of an appetizing *carte du jour* is therefore entitled to some credit as a part of a wholesome propaganda for reform. Ridicule and satire have often brought about a return to sanity of outlook in persons carried away by some insidious nonsense. Unfortunately there always remains the danger that the pendulum of corrective effort will swing too far in the direction of reform before it returns to the equilibrium of sound common sense. The mystery of the vitamins—which, by the way, is gradually being unraveled—should no longer be permitted to obscure their real therapeutic possibilities. The prejudices that many physicians have developed against the almost inevitable overenthusiasm for a new discovery should not prevent them from recognizing and appreciating the real fields for vitamin therapy. The indications are becoming clearer, the possibilities less nebulous, each year.

An interesting illustration of the importance of a tolerant and receptive attitude has just been presented from the Mayo Clinic by Eusterman and O'Leary<sup>1</sup>. They have reported a series of cases in which pellagra has been secondary to some interference with proper alimentation. The majority were the result of malignant or benign obstructing lesions of the upper part of the digestive tract, as well as of un-

1.—Eusterman, G. B., and O'Leary, P: A:: Pellagra Secondary to Benign and Carcinomatous Lesions and Dysfunction of the Gastro-Intestinal Tract. *Arch. Int. Med.* 47:633 (April), 1931.



successful or unwarranted operative procedures provoking marked motor or secretory dysfunction or both. Cases of obstruction usually require surgical intervention, unless the condition is obviously inoperable. However, the risk is greatly enhanced, as Eusterman and O'Leary point out, especially in cases in which malignant growths are present or in cases with high-grade obstruction of whatever nature, because adequate preoperative preparation to combat malnutrition, dehydration and alkalemia, so essential to recovery, is extremely difficult in the presence of complicating pellagra. The latter is now widely assumed to be a deficiency disorder—perhaps, rather, a syndrome of varied dietary deficiency defects. Such a view is supported by the existence of secondary pellagra as just described. Xerophthalmia, a characteristic of vitamin A deficiency, also has been described in man as secondary to the ability to digest and absorb the usual food ingredients in sufficient quantity. Relief or preparation for operation should obviously be enhanced in such cases by attempts at some form of rational vitamin therapy. The possibilities of parenteral introduction of vitamins loom up. This means that safe, effective preparations must be made available. The effectiveness of subcutaneous and even intravenous injections of certain vitamins has already been demonstrated experimentally. The problem is not restricted to pellagra. Other conditions in which the assimilation of food has been disturbed for some cause or in which unsatisfactory food habits have been developed present possibilities that may now be reckoned with in the light of our knowledge of the much derided vitamins<sup>2</sup>. — Editorial in J.A.M.A., May 30, 1931.

### Sex Control

I HAVE read Dr. Myers' article on sex control, in the July, 1932, CLIN MED. AND SURG., page 536, with much interest.

There is no occasion, at this time, to have a "theory" or "hypothesis" as to the function of a right or left ovary in the determination of sex. There are thousands of women at the present time in the United States who have had one ovary completely removed, and who have given birth to both

male and female children following that operation. I myself have had a number of such cases and I think that every gynecologist and obstetrician of long experience and large practice can report similar cases.

The prenatal determination of sex or the deliberate choice of sex is not to be so readily accomplished. Theories are extremely useful in their place, but a condition of this kind is so readily susceptible of absolute proof that there is no occasion whatever for anyone to advance such a theory.

FRANK B. YOUNG, M.D.,  
Long Beach, California.

### A Siphon Apparatus for the Treatment of Ileus\*

I HAD occasion recently to employ a device, shown in the accompanying sketch, for the treatment of ileus. Dr. Lindon Seed has used the method successfully in four cases and he believes the apparatus may supplant ileostomy.

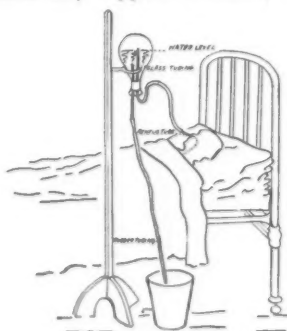


Diagram of siphon apparatus for the treatment of ileus.

The object of the treatment of ileus is to relieve the obstruction by deflation and evacuation, either by medication or by surgical intervention. The siphon apparatus carries out the evacuation of the upper bowel of its fluid contents, as well as of gas.

A Rehffuss tube with olive tip is introduced into the patient's stomach by the mouth, and the proximal end is then brought out through the nose. This end is attached to the siphon by a piece of rubber tubing. The water level is kept below the level of the long glass tube, thus producing

2.—An elaborate review has just been published by Sherman, H. C., and Smith, S. L.: "The Vitamins", 2nd ed., New York, Chemical Catalog Company, 1931.

\*Reprinted from Edgewater Hosp. Staff News, June, 1932.

a vacuum. The short glass tube is connected with a piece of rubber tubing which leads to a basin.

This device not only evacuates the stomach and upper bowel of the noxious gases and the toxic products as quickly as they are formed, but also permits the patient to drink freely and thereby wash the stomach. I would suggest the feasibility of continuous gastric lavage or lavage at intervals by employing a second Rehfuß tube through the other nostril, attached to a flask which contains an isotonic salt or sodium bicarbonate solution.

SAM M. BROCK, M.D

Chicago, Ill.

### Treatment of Diabetic Coma

**D**IABETIC acidosis is largely preventable by accurate management, but in spite of the widespread knowledge of the use of insulin, this condition is still one of the most important complications of diabetes mellitus.

The management of diabetic coma requires, first, the certainty that the coma is due to diabetic ketosis. Diabetic individuals are not immune to cerebral vascular accidents, skull injuries, intoxications, epilepsy, etc. They are especially liable to hypoglycemic reactions if they use insulin.

Acute diabetic acidosis is a serious emergency and demands immediate treatment. Before giving enemas, applying hot-water bottles, etc., give insulin; then put the patient to bed and apply heat or such other measures as may be indicated. The amount of insulin given depends upon the degree of acidosis. Usually 50 units are given hypodermatically and, in extreme cases, an additional 20 units may be given intravenously. Thereafter, at hourly or two-hourly intervals, 10 to 25 units are given until the hourly urine specimens show no more sugar. Several blood-sugar determinations should be made, in order that hypoglycemia may be prevented.

Fluids in large amounts are to be given, by mouth if possible, or by hypodermoclysis or intravenously. Orange juice by mouth, 200 cc. every two hours; or 500 cc. of ten-percent dextrose solution, intravenously, and 1000 cc. of isotonic salt solution under the skin, twice in twenty-four hours, is about the average requirement.

When the ketosis has been cleared up,

sufficient food and insulin must be given to prevent recurrence. The diet prescription and insulin dosage must be made to fit the individual case.

F. R. VON NAHOWSKI, M.D.,  
Ravenswood Hospital,  
Chicago, Ill.

### Lactose in Constipation

**S**EVERAL requests for information have made me realize and regret that I omitted from my article in CLIN. MED. AND SURG. for May, 1932 (page 346) the details of the dosage and method of administration of lactose in the treatment of constipation.

Dr. Edwin Boros, of New York City, has had a large experience with this method, and I have his permission to present his technic.

"The patient receives two tablespoonfuls of lactose in one-half glass of cold water, one-half hour before breakfast. The use of cold water is preferable, because it has a tendency to stimulate the gastric-colic reflex. This is followed, at 10 A.M., by the ingestion of a moderate amount of figs, prunes, dates or grapes. Six to ten prunes, figs or dates is the usual average necessary, or a half-pound of grapes, if desired, may be taken. The effect of prunes is enhanced by soaking them, previous to ingestion, in water for two hours, so as to encourage early fermentation by the fermentative organisms present. In this way, by the time the sugar has reached the small intestine, the process of fermentation has already begun. At 4 P.M., the 10 A.M. program is repeated, and prior to retiring, two tablespoonfuls of lactose are again administered.

"The addition of fats in large amounts is especially recommended in the undernourished, constipated individuals, whereby we gain the added physiologic irritation of the small intestine produced by the soaps which are formed.

"There is considerable gas formation with the use of lactose, and its propelling action should not be curtailed by suppressing it, but on the contrary, the patient should be encouraged to aid in its escape through the rectum. An occasional diarrhea, resulting from the lactose administration, can readily be controlled by reduction of the dosage. As a rule, a few days are required before noticeable results are manifest."

Ordinary milk sugar is relatively insoluble and is somewhat unpalatable to many people. The recent discovery of another form of this carbohydrate, *beta lactose*, which is much more soluble and pleasant to take (it may, in fact, be used as a table sugar), has obviated some of the difficulties which have, heretofore, attended this method of treatment.

ESTHER B. HARDISTY, B.A., C.P.H.,  
New York City

## THE · LEISURE · HOUR

### Me and Golf\*

**F**OUNTAIN Inn has a golf course, and I have learned the explanation of a popular mania.

It's a good course, if it is only a nine-holer. The pro who laid it out said it would be as sporty as any in the country if it had a few thousand dollars spent on it.

The greens are made of sand and the fairway sometimes reminds you that it is still part of a cow pasture, but the course has all the distance and scenery it should have and affords exercise in abundance.

There are hills to climb and descend, three little streams to shoot across or fall in, one long shot that must clear the top of an ancient pine, and one short one down a narrow lane cut through the woods. All in all, it affords everything a golfer could desire—including several natural sand traps beside the greens.

I had my first try at it last week.

Two or three years ago I played two or three holes on Asheville's wonderful municipal course and decided I did not care for it. Last week's experience was my first complete game—if nine holes can be called a game.

And I discovered the trick in it.

To begin with, you balance a little ball on a little wooden peg. Then you take a long-handled club with a knob at the lower end of it, spraddle your legs, take a couple of practice swings to get the distance and then haul off and smack the little ball a mile. Watching it sail through the air, you stick your chest out and grin. What a man! You can hear the fanfare of trumpets. You are a conquering hero.

When you get on the green—in this case a little elevated circle surfaced with

sand, you take another club and do what you did a year or so ago when miniature golf was epidemic. It isn't very thrilling. You just give the little ball a little tap and make it roll into a little hole. Sometime you tap it two or three times and say damn.

But the real trouble is in getting on the green. Your first drive is 10 yards short. So you take a club called a mashie, which has a foot set at an angle to give the ball a lift, and you do a pitch shot. You just tap the ball and make it hop up on the green. Only it doesn't. You hit too hard, and it hops over the green. So you walk around and hit it again and this time you don't hit it hard enough. It falls short. Then you put on a little more steam and the ball hops over again—this time in a sand trap or a patch of weeds or behind a tree.

After you have done this seven or eight times, you hate the ball. You long to smash it. You are full of pent-up fury.

That's the secret. You endure all of this nonsense and agony, and waste time afterward puttering over the green to reach the little hole, because you know what's coming.

Once the hole is achieved you get to bat again. Once more you step up on a little elevated rectangle, balance the ball on its little peg, and smack it! You smack it a mile.

And for the delight and joy and privilege and high adventure of smacking it nine times, you endure all of the rest that man's inhumanity to man has devised to postpone your turn at bat.

Smacking it is the snare that holds you. That and wearing baggy knee pants.

ROBERT QUILLEN,

Fountain Inn, S. C.

\*Reprinted from *Fountain Inn Tribune*.

### She Knew Her Husband

He was stationed at Fort McPherson, Nebr. One night after a hard scouting trip, he came home very quietly and riding to the bedroom window knocked on the pane. From within came the voice of his wife:

"Who's there?"

"It's me."

"Who's me?"

"Why, it's me, Lou. Will, your husband."

"It's nothing of the kind," came the voice of Mrs. Buffalo Bill from within. "I know my husband's voice. Now I've got a gun and I can shoot. You get away from that window."

Buffalo Bill got. He rode back to the fort, went to the canteen, took on many refreshments with the other scouts and soldiers, at last to go forth, fall on his horse, ride him at a gallop down the road, send him straight through the picket fence of the little yard, knock over a sapling tree, and then, as the horse shied, fall off on the wooden veranda. And just as he did so, a gentle voice came from the doorway:

"Is that you, Willie?"

—Hospital Hints.

### Overstrained

An earnest young teacher in Maine  
All at once became wildly insane.

It was the result  
Of the antepenult  
On a word-of-one-syllable brain.

The only person we know who makes a success running other people down is the elevator boy.—*Pacific Mutual News*.

### Dead-Ucation

A lady, recently rich and not too literate, asked, in a letter to the headmaster of a famous school, that he "inter" her son on the roll of his institution.

"I shall be pleased to undertake him," was the succinct reply.—*Word Study*.

### A Real Boy

A little boy went to school for the first time. When he returned home his father inquired how he liked it.

"It's all right, but they ask too many questions," said the lad. "First they asked me where you were born and I told them. Then they asked me where mother was born and I told them. But when they asked me where I was born I had to tell a lie."

"Why?" asked his father.

"I didn't want to say I was born in the Woman's Hospital and have them think I was a sissy, so I told them it was in the Yankee stadium."—*New York Sun*.

### Causes of the Depression

Too much oats and too much wheat;  
Too much corn and too much heat;  
Too much cotton; too much oil;  
Too many hours that we don't toil;  
Too many highways; too many cars;  
Too many people behind the bars;  
Too many loafing; too many bets;  
Too many failing to pay their debts;  
Too many living beyond their means;  
Too many eat canned corn and beans;  
Too many hiring their washing done;  
Too many playing bridge for fun;  
Too many looking to Uncle Sam;  
Too many people don't give a damn;  
Too many poets; too much prose;  
Too many girls without underclothes;  
Too much buying of goods on time;  
Too many people don't save a dime;  
Too much bail; too much play;  
Too many officers on big pay;  
Too much taxes; too much spent;  
Too many folks spend every cent;  
Too much fun; too much ease;  
Too much trouble; too much law—  
The durndest mess you ever saw.

—R. W. LEAVITT, in  
*Arlington (S.D.) Sun*.

If he has that appearance, he may not wear a corset. It may be dignity.—*Foundation Inn Tribune*.

## DIAGNOSTIC · POINTERS

### Chronic Vitamin Deficiency

Chronic vitamin deficiencies produce many vague, little-understood disorders, which, as a whole, are more important in medical practice than are rickets and scurvy.—DR. LAFAYETTE B. MENDEL, New Haven, Conn., before A.M.A.

### Ovarian Dysfunction

Ovarian dysfunction is based almost entirely upon the existence of amenorrhea, dysmenorrhea or other abnormalities in the menstrual phenomena. But clinical and experimental evidence points also to the interaction of other glands of internal secretion in the normal or abnormal functions of the ovaries.

In *M. J. & Record*, July 15, 1931, Dr. A. S. McQuillan, of New York, reports several cases of menstrual dysfunction, some evidently associated with thyroid and pituitary gland disorders, manifested by headaches, etc., which were relieved by a combination of thyroid extract and glycerin extract of ovary.

Tell your patients the answer! Ask us for your copy of "What About Heart Disease?"

### Finger Nails and Tuberculosis

Finger nails tell the story of a patient's winning or losing fight against tuberculosis, recent observations by Dr. A. G. Hahn at the Trudeau Sanatorium near Saranac Lake have shown.

Pitted nails were found in every one of fifty cases of active tuberculosis investigated; while 50 ex-patients and normal subjects exhibited smooth nails. A third group, composed of 50 cases of inactive tuberculosis, yielded only three instances of indented nails.

Downward curving of the finger nails

is another symptom of lung diseases, though not quite so accurate an index of progress. Seventy-six (76) percent of the patients with active tuberculosis had down-curving nails, as did half of the inactive cases. Thirty percent of the ex-patients had retained the incurvature after a cure had been effected, but none of the normal group had the peculiarity.

Extreme blueness of the finger nails is another symptom of the progress of tuberculosis. The bluer the nails, the more advanced the case was usually found to be.—*Bloodless Phlebotomist*, Vol. VII, No. 6.

### Pain in the Testicles

The presence of gas or air in the pelvic tissues that can be palpated by rectum, is indicative of a retroperitoneal tear in an air- or gas-containing viscus.

When, upon making an abdominal incision, gas or air is found between the peritoneum and transversalis fascia, in a patient suffering from an injury, a retroperitoneal rupture of a hollow viscus should be suspected.

Early excruciating pain in the testicles, following a severe traumatism to the upper abdomen, indicates a retroperitoneal rupture of the duodenum, with a spreading out of bile beneath the peritoneum so as to irritate the testicular nerves, the sympathetic chain accompanying the spermatic artery.—DRS. E. BUTLER and E. CARLSON, of San Francisco, in *Am. J. Surg.*, Jan., 1931.

### Blood Spitting

When a patient states that he has coughed up blood, we should exercise considerable care to determine the correct diagnosis. Only about 50 percent of patients showing this symptom suffer from pulmonary tuberculosis. Hemoptysis is found, not only in pulmonary tuberculosis,



but in cardiac disease, in aortic aneurism, in bronchiectasis, in acute and chronic non-tuberculous pulmonary conditions, in lesions of the bronchi, trachea and larynx, in diseases of the blood, in relation to pregnancy and menstruation, in hysteria and due to unknown causes. — DR. J. SALIBA, Albemarle, N. C., in *Southern Med. & Surg.*, Jan., 1931.

### Peptic Ulcer and the Thyroid

The incidence of peptic ulcer in cases of hyperthyroidism is higher than its average incidence; in hypothyroidism peptic ulcer does not occur. The thyroid gland, then, has the power of controlling gastric acidity but is, itself, stimulated by the adrenals and nervous system. These results have been verified by direct experiments on dogs and have established these conclusions: Hyperacidity is the actual cause of peptic ulcer; the thyroid, the adrenals and the nervous system completely dominate the gastric acidity. — DR. G. W. CRILE, of Cleveland, in *Ohio St. M. J.*, Apr., 1931.

### The Dark-Field Microscope in the Diagnosis of Early Syphilis

One accomplished in the use of the dark field microscope can definitely establish the presence of the *Spirochaeta pallida*, which interprets the lesion as a beginning syphilis or a hard chancre, as early as a few hours after being noticed to a longer period, which then makes the examination more simple. The early recognition by such a method precedes the positive blood examination by at least five or six weeks and, therefore, certainly gives the physician a good chance to begin his therapy long before the blood is positive to the Kahn test, which manifests early and is the most sensitive of the blood tests. — DR. G. H. HOLT, of Cincinnati, in *Urol. & Cutan. Rev.*, Mar., 1931.

### Vitamins in Rickets

We are definitely of the opinion that rickets is not due to a deficiency of vitamin D alone, but that vitamin A and possibly other factors play an important part in this disease. — DRs. A. G. DE SANCTIS and J. D. CRAIG, in *N. Y. St. J. of M.*, Sept. 15, 1931.

### Priapism in Multiple Sclerosis

Multiple sclerosis is a common disease. On the basis of a personal case and some others cited from literature, it is shown that chronic priapism occurs as an early symptom in this disease and its presence in a non-traumatic case should lead to suspicion; also that the causative lesion in the cord is higher up than the sacral region. — DRs. S. D. WILGUS and E. W. FELL, of Rockford, Ill., in *Arch. Neurol. & Psychiat.*, Jan., 1931.

### Manic-Depressive Psychosis

The study of 485 cases of manic-depressive psychosis showed a parallelism between the intensity of the familial neuropathic factors, the age of onset, the length of the attack and the length of the intervals. — DR. H. A. PASKIND, of Chicago, in *Arch. Neurol. & Psychiat.*, Jan., 1931.

### Tiredness

The patient with hypothyroidism is tired in the morning, headachy, and stiff; but, as the day wears on, all these symptoms wear off. The activities of the day help. On the contrary, the patient with hypoadrenia becomes more and more tired, and is "all in" by eleven o'clock. Activity palls on him, and things often look very dark and discouraging. — HENRY R. HARROWER, M.D., Glendale, Calif.

Promote health audits. Send for your copy of "Who's Your Health Banker."

### Postoperative Obstruction

Postoperative vomiting that persists after 24 hours, or vomiting that begins two or three days after operation, calls for careful analysis in its relation to the general clinical picture, together with the evidence obtained by abdominal auscultation. The stethoscope demonstrates active peristalsis and one is justified in expecting, if the case is not one of obstruction, that an enema will release gas. If repeated effort in this direction fails and if, at the same time, there is increasingly violent peristalsis, a diagnosis of obstruction is justified. — DR. JAS. E. KING, of Buffalo, in *New York St. J. Med.*, Jan. 15, 1931.

## Current · Medical · Literature

### The Blood Sedimentation Test in General Medicine

In *Am. J. Med. Sc.*, May, 1932, Dr. J. W. Cutler, of the Henry Phipps Institute, gives the following results, based upon observations made on approximately 5,000 patients over a period of six years in hospital, office and dispensary practice.

The test was found to be of distinct diagnostic and prognostic value in diseases characterized by disturbed stability of the blood.

In diagnosis the test has two values, first as a diagnostic lead and the second as a diagnostic gage. As a diagnostic lead it indicates the presence of serious disease, not infrequently before the disease can be recognized by the usual clinical and laboratory methods. As a gage of the constitutional disturbance produced by the pathologic process, it indicates the intensity of the disease and thus, like fever or pulse rate or blood count, but more exactly, helps to complete the diagnosis in a qualitative sense.

As a prognostic index and, similarly, as a guide in treatment, the rate of sedimentation has been shown to be a more accurate and reliable reflection of the real condition of the patient than usually accepted procedures. It invariably becomes more rapid as the disease progresses, and approaches stability only as the physical condition returns to normal. It is not influenced by psychologic factors and may be the only warning of disaster among promising clinical signs, such as gain in weight and the absence or subsidence of symptoms. In this way it is often the only, or the most accurate, evidence of favorable, or of unfavorable response to treatment.

The test is very simple to perform and to interpret and is inexpensive. It is a clinical procedure and can be carried out in the office, in the dispensary or at the bedside. The complete result is available within an hour and, in case of necessity, the sedimentation test will give valuable information within the first half-hour.

Its greatest field of usefulness should be in office and dispensary practice, especially in the latter, where large numbers of patients must often be seen in short periods of time and by men seeking experience. Properly interpreted and used with an open mind, the test should in time become one of the most widely used tests in clinical medicine.

Its practical value in any given disease is best studied as a separate problem and such studies should be undertaken in large numbers so that sufficient data become available in a short period of time. Only in this way will lingering doubts

be removed and the sedimentation test firmly established as a valuable addition to the equipment of the physician. The author's graphic method (See *Am. J. Med. Sc.*, 171:882) was followed throughout.

### Ephedrine in the Treatment of Narcolepsy

No successful form of treatment for narcolepsy was recorded until recently, when Doyle and Daniels, of the Mayo Clinic, reported 5 cases in which the somnolent and cataleptic seizures were abolished within 24 hours by the use of ephedrine.

In *Ann. Intern. Med.*, Apr., 1932, Dr. H. A. Collins, of Des Moines, reports 2 further cases successfully treated by this medication. Ephedrine should be given orally in doses ranging from  $\frac{1}{8}$  grain (0.025 Gm.) to  $\frac{1}{4}$  grain (0.05 Gm.), three times daily (at 8 A.M., noon and 4 P.M.). The dose may be increased to  $\frac{1}{2}$  grain t.i.d. if necessary, which must be kept up.

### Nembutal in Dental Surgery

Prior to the introduction of anesthetics, extraction of teeth was a most disagreeable and painful experience. In recent years, the pain relative to such operations has been totally eliminated, but when one considers the relationship of fear to pain, extraction of teeth still remains a disagreeable experience to many.

In *Dental Cosmos*, March, 1932, Edward C. Stafne, D.D.S., of the Mayo Clinic, Rochester, Minn., reports that sodium ethyl (1 methylbutyl) barbiturate (Pentobarbital or Nembutal) seems to have certain distinctive characteristics which are advantageous. It seems to be more definitely sedative, the action quicker and the effects shorter than those of others tried. Surgical sedation is more important than hypnosis. The drug has been particularly satisfactory in preparing patients for dental operations.

One hour before operation, 3 grains (0.2 gm.) of sodium ethyl (1 methylbutyl) barbiturate was given orally in more than 175 cases in which patients were hospitalized, in the period from January 1 to June 1, 1931. The effects lasted from four to five hours; the pain and restlessness incident to such operations in the absence of preliminary medication were almost totally eliminated. For adult patients who are not in a hospital, it would seem advisable to use 1.5 grains (0.1 gm.).

The absence of fear and nervous tension has increased the margin of safety in the use of epinephrin, since fear tends to increase the

output of the patient's own epinephrin. This is important, especially in cases of hypertension. The tolerance for procaine is increased and, although the amount used for dental operations is relatively small, this advantage cannot be ignored.

With general anesthesia, the tendency to nausea and vomiting is almost totally absent if the barbiturate is used and, according to Magill, the amount of anesthetic required is lessened.

### Filtrable Forms of the Common Bacteria

In *J. Indiana S.M.S.*, Jan., 1932, Dr. T. B. Rice, of Indianapolis, indicates recent research trends which seem to demonstrate that bacteria of well known varieties possess filtrable forms, which may be grown at will and then induced to the former non-filtrable state. This phenomenon explains many pathologic puzzles.

The researches throw a strong light upon the nature of bacteriophage and antiviral; it seems more certain than ever that these are merely phases in the life cycle of homologous organisms.

The new culture medium for use in the study of filtrable forms, devised by Kendall and called the "K" medium, strikes out on an entirely new principle. In nearly all of media used in times past, protein degradation products—peptone, meat infusions, etc.—have played a major role in furnishing the nutriment for the bacteria and not unlikely in determining the morphology of the culture. It occurred to Kendall that the organisms, as they grow in the animal body, are in the presence of the unaltered protein and of little or no protein degradation products. These conditions are duplicated in his new medium. The use of this medium has shown that various cocci can be made to change into filtrable forms and from these filtrable forms can pass again, by repeated culturing, into non-filtrable forms.

The etiology of certain diseases may be cleared up by the use of these new methods.

### Salt-Poor Diet in Chronic Sinusitis

Since diet is considered such an important factor in the treatment of most chronic diseases, it seems strange that so little attention has been given to this phase of the management of that widespread, distressing and not infrequently dangerous condition, chronic sinusitis.

Dr. E. V. Ullmann, of Portland, Oregon, has opened up the subject in *Northwest Medicine* for May, 1932, in a manner which seems so simple and rational that it is to be hoped that his plan may have a wide trial and that reports of the results may determine the degree of its usefulness.

The diet he proposes is, essentially, one poor in salt, because it is well known that most persons consume daily far more sodium chloride (NaCl) than is required by the body, and that every gram of salt in the body is capable of holding 70 grams of water. Experiments have shown that a larger part of this excessive NaCl is contained in the skin and mucous membranes, producing a tendency to edema, especially in

the latter structures, and to excessive secretion.

Biologic experiments have shown that sodium has the power of expelling calcium from its combinations, and therefore the benefits to be expected from the administration of the latter element will be largely lost if the body contains an excess of NaCl.

There is no necessity for restricting the intake of water in sinusitis, because reduction of the consumption of NaCl will automatically produce a diuretic effect and reduce the body fluids.

The diet proposed by Ullman is, roughly, as follows: For the first week, restrictions should be drastic. Practically no salt should be taken and the diet should consist solely of vegetables and fruits, raw or cooked, according to conditions. For the next three to five weeks, the patient should observe two closely diet-restricted days each week; after that, one restricted day a week. The intake of salt should be markedly reduced at all times.

Much better results are obtained if the patient can be in a hospital with a good diet kitchen during the week or ten days of rigidly restricted diet, as it is difficult to carry out this regime in the home.

No patient can ever be harmed by this treatment, and most of the 33 patients, in whom the diet has been used so far, have been decidedly benefited by it.

**Tell your patients the answer! Ask us for your copy of "What About Heart Disease?"**

### Immunization by Bacterial Antigens

In *Illinois M. J.*, Feb., 1932, Dr. J. F. Biehn, of Chicago, alleges that prophylactic immunization by means of bacterial antigens is of proved value and depends largely upon the specific antibody response.

All true bacterial antigens are protein in nature and, of necessity, foreign to the tissue cells; they are also in the colloidal state.

There are two major factors in bacterial immunization: the proper antigen and the ability of the patient's cells to respond.

Subcutaneous administration has been the general rule.

Recent work with pneumococci has shown that the specificity of a bacterial antigen may be determined by a carbohydrate linked chemically to the protein. The carbohydrate determines the type-specific response and protection, where as the pneumococcus bodies produce only a species response. The greatest hope for therapeutic immunization in certain infections, by means of bacterial antigens, lies in their proper preparation from the specific type of organism containing the type-specific carbohydrate, and satisfactory results will probably not be forthcoming otherwise. The selection of the proper organism for the preparation of a vaccine or other bacterial antigen apparently is of major importance, particularly so since our knowledge of types of the various species of bacteria is being most profoundly modified at the present time.

Our ideas of immunity are also being definitely

changed. The two well known theories, the phagocytic theory of Metchnikoff and the chemical theory of Ehrlich, have been found inadequate. There is now ample evidence that a third factor exists, which concerns the active part played by the reticuloendothelial system, particularly by the cells known as clasmocytes.

With regard to the recent developments, the bacteriophage and antivirus, it would appear that the immunity or resistance conferred by these products may be both specific and non-specific in nature, due to the stimulating effects upon the clasmocytes.

Bacterial antigens are not contraindicated in acute infections, even if generalized.

Therapeutic immunization is relatively without danger.

### Bacteriophage in Wound Treatment

In *Am. J. Surg.*, Feb., 1932, Dr. F. H. Albee, of New York, expresses his belief that d'Herelle's principle of bacteriophagy is largely responsible for the success of the Orr method of treatment of wounds in which the affected tissues are allowed to stew in their own exudates. But he does not use iodine and alcohol to swab the wound surface, because of the danger that the chemicals may kill the beneficial parasite or do more damage to it than to the pathogenic bacteria.

When saucerization and cleansing of the wound is complete it is immediately packed with sterile yellow vaseline and gauze soaked in an excess of the same substance. Otherwise the dressing and plaster-casting is the same as in the Orr treatment and is left intact for 8 to 10 weeks, after which it is changed and the same treatment reapplied.

There is, according to the author, a distinct economic advantage in this treatment, as the cost of hospitalization is spared to the patient, who can be removed to his own home a week or so after operation and only returns to the hospital for redressing.

Under such treatment, Dr. Albee believes that a specific bacteriophage develops spontaneously in about 94 percent of cases of wound infection.

### Vascular Disease Treated With Acetylcholine

In *Ann. Intern. Med.*, Apr., 1932, Dr. W. C. Waters, of Atlanta, reports that 3 patients having trophic lesions due to vascular disease of the extremities were treated by intramuscular injections (50 to 100 mgm., repeated at 12 to 24 hour intervals) of acetylcholine hydrochloride.

Healing of gangrenous areas, relief of pain and elevation of the surface temperature to a higher level were obtained by the use of the drug. In one case pulsations in the peripheral arteries were reestablished.

In one to three hours following an injection, the cutaneous temperature in the affected parts was increased 2° to 5° C. This elevation lasted 18 to 24 hours and was accompanied by a sense of warmth and relief of pain in the extremities.

The advantages of the use of acetylcholine are: (1) the ease of administration; (2) the

absence of constitutional reactions following its use; and (3) the ability to maintain a constant and uniform elevation of the surface temperature by frequently repeated injections.

### Dial, Amytal and Nembutal as Surgical Anesthetics

As reported in *Surg. Gynec. and Obstet.*, May, 1932, by Drs. J. F. Fulton and A. D. Keller, of Yale University, the barbituric acid derivatives, known under the trade names, Dial, Amytal and Nembutal, have been used extensively as surgical anesthetics on animals (primates); their properties have been contrasted and exemplified by a careful analysis of the responses to three major operations on the same animal, separated from each other by some months.

The results of the study may be summarized as follows:

Anesthetic	Dose per Kilogram	Induction time (Minutes)	Recov. time (hrs.)	
			Swallowing	Up
Dial (Ciba) .....	55 mgm.	25	30	48
Sodium Amytal .....	65 mgm.	8	13	20
Nembutal .....	40 mgm.	5	6	10

The authors say that Nembutal is an almost ideal anesthetic, administered intraperitoneally, in all cases in which the operation is not to last longer than 2 hours and in which rapid recovery is desired.

### The Full-Thickness Skin Graft

Based on his experience of a large series of observations, Dr. E. C. Padgett, of Kansas City, in *J.A.M.A.*, Jan. 2, 1932, calls attention to the possibilities of the full-thickness skin graft in the correction of severe contractural cicatricial deformities and also to certain other uses for which the graft offers the best cosmetic and functional result obtainable.

According to the author, the special features of the full-thickness skin graft are that it is obtained without much damage; the "take" is fairly certain, with proper technic in a clean field; it gives good protection; and a large surface may be covered with the minimum amount of ultimate contraction, in comparison with any other type of graft. A successful full-thickness skin graft will, in most instances, closely duplicate the natural surface. A decided practical advantage is that, as a rule, only one operation is necessary.

The most brilliant application of a full-thickness skin graft is for the covering of raw surfaces obtained after cross-cutting or excision of contracting cicatricial tissue, about such regions as the front of the neck, the palm of the hand, and over the flexor surfaces of joints that can be extended or over the extensor surfaces of joints that can be flexed. In the most severe deformities of this type it is practically the only method, the use of which gives a satisfactory functional and cosmetic correction.

After certain plastic or destructive operative procedures, a raw surface may remain, for which a replacement covering is urgently needed, either

for cosmetic reasons or to prevent a contractural deformity or both, for which the full-thickness skin graft very often fulfils the requirements better than other types of skin transplantation.

There is also a miscellaneous group of applications, such as "web" fingers, "port wine" marks of the face and destroyed eyebrows, for which the full-thickness skin graft offers the most satisfactory covering.

### The Value of Inorganic and Organic Iron in Hemoglobin Formation

With regard to the necessity of supplementing iron with copper when the former is used for hemoglobin formation in anemia, it has been suggested that copper is necessary only when inorganic salts of iron are used and not with organic iron.

As reported in J.A.M.A., Mar. 26, 1932, Dr. C. A. Elvehjem, of the Department of Agricultural Chemistry, University of Wisconsin, made a series of animal experiments (rats), from which he has definitely found that in the absence of copper, organic iron (hematin) is as ineffective as inorganic iron (ferric chloride) for the cure of nutritional anemia in rats. In the presence of copper, organic iron promotes a partial cure of the anemia in rats, but the regeneration is neither so rapid nor so complete as the recovery obtained when ferric chloride is used as the source of iron.

The hemoglobin content of the blood of rats, which remained at from 6 to 7 Gm. per hundred cubic centimeters as long as hematin and copper was supplied, increased to 16 Gm. per hundred cubic centimeters in three weeks, when ferric chloride was added to the diet.

The iron content of the livers from the different animals demonstrates that the decreased activity of the organic iron is due to the inability of the rat to assimilate the iron present in the hematin molecule.

### Modified Cardiorespiratory Efficiency Test

In *Ann. Intern. Med.*, Jan., 1932, Dr. A. Eustis, of New Orleans, describes what he has found to be a satisfactory clinical cardiorespiratory functional test, a modification of the test first described by Frost in 1922, in connection with insurance examinations.

The technic of the modified cardiorespiratory test, which is especially valuable in cases of myocardial insufficiency, is as follows:

After physical examination of the patient and recording of results, the systolic and diastolic pressures are taken with the patient seated, the pulse rate being counted at the same time. The pressure in the cuff is then released and the patient told to expire through the spirometer after full inspiration, cautioning him to watch the pressure gauge and keep the pressure uniform at 20 mm. of mercury. The systolic pressure is taken before the patient inhales, and after expiration has been completed the maximum systolic pressure being recorded. Without releasing pressure in the cuff, the needle of the spirometer is turned to zero, the systolic pres-

sure is again taken and the patient again instructed to inhale fully and expire through the spirometer as before. Three successive readings are then made. If it is evident that the patient has not expired his full vital capacity, a second test should be made after cautioning him to inhale and expire fully; or, perhaps only a fourth expiration may be necessary.

The results may be plotted as a curve, the change in millimeters of mercury in blood pressure obtained after each expiration representing the response, and the change in millimeters in the blood pressure obtained just prior to each inspiration representing the base line. A normal response should result in an increase of systolic blood pressure after the third expiration of from 30 to 40 mm. A failure to respond, in my experience, denotes a weakened heart muscle. A falling base line is invariably associated with great dilatation of the heart. The test should not be tried on any individual with marked dilatation of the heart.

### Pancreas Enzymes in Local Treatment

Advantage may be taken of the action of the proteolytic enzyme trypsin as a local application. Its capacity to digest the protein of dead tissues is extraordinary and, inasmuch as little use has been made of pancreatin in medicine, even as an agent in digestive disturbances, physicians generally are not fully appreciative of the powerful character of its action. In the manufacture of pancreatin in the factory, workers frequently develop bleeding from the fingers, palms of the hand, the nose, etc., and examination of these sites discloses that the light pancreatin powder, settling on the moist surfaces, has digested all dead epidermis and leaves the living dermis exposed.

The U.S. Pharmacopoeia prescribes no standard for strength of trypsin in pancreatin; it fixes only, the amylolytic activity. There is, therefore, some variation in the trypsin activity of commercial pancreatins, and salves or ointments made up containing pancreatin for local application should be used cautiously until the strength has been determined.

They are used in conditions like furuncle, acne vulgaris, eczema seborrhoicum, cicatrices, indolent indurated ulcer edges, etc. Such pastes, in view of their definite activity, under careful supervision, should find a useful place in practice.—J. of *Oncology*.

### Burning Tongue

In *Texas St. J. Med.*, Aug., 1931, Dr. J. C. Michael, draws attention to a class of patients, seen from time to time, whose only complaint is a burning tongue. The pain varies in intensity and is intermittent. The condition may be differentiated from other diseases of the tongue, as these latter usually show objective manifestations. The author believes that in some cases the affinity between burning tongue and Hunter's glossitis is quite close.

The author mentions four underlying conditions which may produce burning tongue, namely: (1) Psychoneurosis (cancerophobia), mental strain; (2) local causes, (lingual tonsil-



litis, dental disease, Vincent's infection); (3) gastric secretory disorders (hypo-acidity and anacidity in most cases; hyper-acidity in a few cases); (4) pernicious anemia or secondary anemia.

As to treatment, local applications seem to be of little avail. All possible local causes must be eliminated and systemic disturbances combated according to indications.

### Calcium in Eye, Ear, Nose and Throat Work

In *Eye, Ear, Nose & Throat Monthly*, Dec., 1931, Dr. E. Podolsky, of New York City, cites several reports in recent literature pointing to the value of calcium—calcium lactate tablets by mouth or calcium gluconate injections—as a prophylactic against hemorrhage in operations on adenoids, tonsils and teeth.

One writer has found that one of the simplest and most effective procedures in the treatment of hayfever is calcium gluconate by mouth, a level teaspoonful of powder two or three times a day or, better, the intramuscular injection of an ampule of 10 percent solution twice a week.

In several ear and eye conditions calcium has been found very useful.

### Treatment of Cataract with Lens-Antigen Extract

Following ten years' experience in the use of lens-antigen (lens protein) subcutaneous injections in the treatment of cataract, Dr. A. E. Davis, of New York City, in *Am. Med.*, Jan., 1932, states that subcapsular senile cataract is the most favorable type for the treatment. When given in the very early stages 80 to 85 percent can be improved or arrested. Cortical, including posterior cortical, types comes next; in these 75 percent can be improved or arrested. In all types with vision less than 20/70 (except in very old and feeble patients, in whom an operation is not feasible) the remedy should not be given.

### Quinine Tolerance and Thyroid Secretion

In *Northwest Med.*, July, 1931, Dr. Israel Bram, states that, as the result of observations in a total of 800 cases of hyperthyroidism, it appears that the quinine test for thyrotoxicemia is a dependable guide in diagnosis, the frequency of error not exceeding 5 percent. As with basal metabolic studies, the test does not discriminate between toxic adenoma (true hyperthyroidism) and exophthalmic goiter (Graves' disease).

The tolerance for quinine by subjects of hyperthyroidism appears to vary in direct proportion with the height of the basal metabolic rate, and is fairly parallel with it, thus serving as a guide in progress of the disease. Depending upon the severity of active hyperthyroidism, patients are capable of taking from 30 to 90 grains of quinine sulphate daily for weeks without evidences of cinchonism.

In the occasional instance of a quinine-negative subject, who was an otherwise typical case of exophthalmic goiter, it was discovered that it was an uncommon case of active Graves' syndrome, apparently without the element of hyperthyroidism. In these patients, despite nervousness, sweating, wasting, exophthalmos, heart hurry, trembling, etc., the basal metabolic rate remained within normal limits.

Maximal doses of quinine sulphate, given to the average sufferer from hyperthyroidism, have proved to be of distinct benefit in over 60 percent of this series and may be regarded as a valuable asset in the treatment of these patients.

From the evidence herein presented it would appear that the physiologic action of maximal doses of quinine favors either a curbing of the elaboration of excessive thyroid hormone, or a neutralization of excess blood-thyroxin, or both.

### Hyperemesis Gravidarum

According to Dr. A. W. Holman, of Portland, Ore., in *Northwest Med.*, July, 1931, the essential points in the physiologic treatment of severe hyperemesis gravidarum are:

1.—*Isolation.* Hospitalization is imperative. The patients must have no visitors.

2.—*Sedatives.* Veronal (barbital), gr. 10 (0.65 Gm.) and sodium bromide, gr. 60 (3.9 Gm.), dissolved in 6 ounces (180 cc.) of tap-water are to be given as a retention enema every six hours. This sedative, or some similar one, will keep the patient tranquil and free from worry.

3.—*Nothing by mouth until ordered.* It is extremely important that this order be followed.

4.—*Dextrose*—300 to 500 cc. of a 25-percent solution, intravenously, at least twice daily.

5.—*Saline Solution:* Not less than 2,000 cc. of isotonic saline solution should be given daily by hypodermoclysis, or 1,000 cc. intravenously at least twice daily.

6.—If the alkali reserve of the blood is low and does not return to normal following the administration of dextrose, a 3- or 4-percent solution of sodium bicarbonate may be given by rectum.

This intensive treatment should be continued until the blood chemistry returns to normal; then oral administration of sweetened fruit juices may be commenced.

### Care of Mentally Diseased Patients

Dealing with the facilities for treatment of mental disease and their cost, Dr. C. F. Read, of Elgin, Ill., in *Illinois M. J.*, Dec. 1931, declares that home care of mental patients with acute conditions is inadequate and expensive.

Sanitarium care ranges from poor in character to what may be considered adequate, but is within the means of comparatively few people nowadays, for any considerable period of time.

Special research and teaching hospitals are few in number and the cost of maintenance, because of the teaching done and the large

number of out-patients dealt with, cannot be compared with state hospital costs.

State hospitals are the mainstay of all mental treatment programs. These hospitals should be maintained upon the same basis as our public schools—as public welfare projects, open to all without any stigma of “charity” attached.

Adequate state hospital treatment involves proper physical equipment at a minimum cost of \$2,500.00 to \$3,000.00 a bed.

The diagnosis of a mental case is often a far more exacting procedure than that involved in physical disease alone.

Personnel is the most important and most expensive single item in state hospital maintenance, involving one physician for every 175 patients, a competent laboratory staff, a complete surgical and medical hospital setup, registered nurses upon all sick and acute mental wards, a corps of hydrotherapists sufficient for twenty-four hour service, a training school, social service and occupational therapy departments, and facilities for out-patient and educational work in the surrounding community.

The State of Illinois, at present, is giving its insane good care and looking forward to a program of treatment that can be considered adequate. Millions have been spent during the past two years in the relief of crowded conditions, which expenditure will inevitably result in the physical and mental improvement of the patients. More physicians and nurses are constantly being added to the personnel at the various institutions and a definite attempt is being made to give patients individual treatment in place of group care.

### Trichlorethylene in Tic Douloureux

Reviewing the various methods employed for the relief of tic douloureux, Dr. M. A. Glaser, of Los Angeles, in *Western J. Surg. Obstet. & Gynec.*, Dec., 1931, remarks that, in spite of the excellent results of surgery, anesthesia occurs. For this reason he believes that every patient suffering from tic douloureux should first be given the opportunity to test trichlorethylene therapy. Plesner's original inhalation method he thinks the most satisfactory:

Twenty (20) to 25 drops of trichlorethylene should be placed upon a piece of gauze; the inhalation should be continued until the odor entirely disappears (6 to 7 breaths); this should be carried out three or four times a day over a period of a month to six weeks. If relief is obtained, it is usually noted after four or five days of treatment. In such cases the drug may be used as a prophylactic, by inhaling it, as above noted, for three consecutive days every two or three months.

### Spinal Anesthesia in Obstetrics

In *Am. J. Obst. & Gynec.*, Nov., 1931, Dr. S. A. Cosgrove, of Jersey City, states that spinal anesthesia is of great usefulness in obstetrics, as an anesthetic for the operative termination of labor.

Nupercaine is less desirable than novocaine (procaine) for such purpose because with the former drug: (a) perfect anesthesia is not uni-

formly obtained; (b) symptomatic reactions, nausea and vomiting, and especially very severe headache, are more frequent; (c) the acknowledged longer duration of anesthesia due to nupercaine does not constitute an advantage sufficient to offset the disadvantages noted in obstetric practice.

### Vital Hormone of the Adrenal Cortex

It is known that completely adrenalectomized animals can be kept alive indefinitely by the administration of concentrated cortical extract (Cortin).

In *Ann. Inter. Med.*, Nov., 1931, Dr. F. A. Hartman and associates report the results of the use of this extract in some clinical cases of practically complete adrenal insufficiency and of other conditions. The daily administration (by subcutaneous injection) of the extract from approximately 1,000 to 1,200 grains of cortex was necessary to prevent the recurrence of symptoms.

In the first case of adrenal insufficiency, the use of the extract was of undoubted benefit. Following its use the patient recovered from a very critical state. That it kept him alive for nearly eight months was indicated by four definite relapses which followed its reduction or its discontinuance. Readministration or increase of dosage in each relapse was followed by return to his former level. He was making slow but definite improvement when bronchopneumonia caused his death.

The period of treatment in the second case was too short for observation to be of any value.

In a third case, one of much less severity, the patient showed a remarkable increase in her ability to work without fatigue. Clinical improvement was not kept pace with this increase.

One case of hyperthyroidism has exhibited decided clinical improvement following the use of the extract alone.

Two cases of muscular atrophy and one of muscular dystrophy have shown some improvement.

### Tendon Injuries

As emphasized by Dr. S. L. Koch, in *Bull. Chicago Med. Soc.*, Nov. 21, 1931, although in cases of tendon injuries there is great advantage in immediate repair, yet the indications for immediate repair are very limited, owing to the danger of infection.

In injuries of the tendons of the hand, a number of factors must be considered: The condition of the hand at the time of injury; the way in which the injury was sustained; the place where the accident occurred; the first-aid treatment given; the time that elapsed before the physician saw the patient; and, finally, the facilities available for repair.

If the hand was clean; if the injury was due to a clean-cutting wound from a knife, a glass bottle, or a porcelain faucet; if the first-aid dressing was sterile; if the wound was sustained indoors; if the patient is seen within two hours; and if a well-equipped operating room is available for repair, one may be justified in performing an immediate operation. But if the hand

was dirty; if the wound was sustained on the street; if it was the result of an automobile injury; if there was considerable hemorrhage, so that the first aid dressing was contaminated; if more than two or three hours elapsed after the injury; and if adequate assistance and a well-equipped operating room are not available, they believe it is much wiser to suture the wound loosely or leave it unsutured, to let it heal and later, when they are sure that they can perform the operation as a clean operation, to repair the injured tendons.

Dr. Koch also emphasizes that a bloodless field, secured with the help of a blood-pressure apparatus pumped up to 220 millimeters of mercury, is of very great advantage.

### The Treatment of Heart Diseases

In *Med. World*, Dec., 1931, Dr. D. Stein, of Philadelphia, states that the following rules have been found applicable in heart diseases:

1.—In heart disease with good compensation: Rest; avoidance of undue fatigue; light diet; keeping the bowels open; and hydrotherapy (warm baths).

2.—In heart disease with decompensation: Rest; light diet; restricted salt intake; limited intake of fluid; avoidance of stimulants; digitalis medication.

3.—Heart failure with congestion and edema: Use especially digitalis and diuretics. Those recommended are ammonium chloride, salyrgan, theocine, theacylon and euphyllin or metaphyllin. The only contraindication to digitalis is partial heart block, where digitalis increases the block and leads to dropped beats. Digitalis often fails in tachycardia of fevers and hyperthyroidism, in chronic renal disease and in syphilitic aortic valve lesions. The most useful preparations of digitalis are granules of digitalin (1/240 or 1/600 gr.), corresponding to 15 to 20 minims of the tincture.

### Plantar Reflexes in Normal Adults

There is no standard method of examining the plantar reflex, nor is there any widely accepted way of reading the response.

As reported in *Arch. Neurol. & Psychiat.*, Nov., 1931, by Dr. H. A. Davidson, of Newark, N. J., a study was undertaken by examining 160 normal individuals, with the hope of establishing uniform conditions for eliciting this phenomenon by investigating the responses under recorded and controlled circumstances.

From this study it appears that in adults there is no one type of response that can be considered the normal plantar reflex. In most cases all the toes flex, but extension of the toes, even of the great toe, is compatible with a normal motor system. Isolated extension of the great toe, with fanning of the other toes, does not occur in normal adults.

In eliciting the plantar reflex, the positions of the patient's head and knee are not important, and distraction is not usually necessary.

When withdrawal of the whole foot occurs, the patient should be reexamined with a lighter stimulus.

A pin drawn along the sole of the foot is a convenient instrument for studying the plantar reflex. It is not a nocuous stimulus. A pin inserted into the ball of the foot is a nocuous stimulus; it tends to produce flexion of all the toes. The Babinski sign is an extension, and cannot, therefore, be a reflex of defense to a harmful stimulus.

No theory has adequately explained the plantar reflex; no such theory can be accepted unless it accounts for: (a) the infantile Babinski sign; (b) the fact that the response in human adults is usually flexion; and (c) the clinical Babinski sign of disease of the pyramidal tract.

In recording the plantar reflex, the clinician should describe the responses that occur in the lesser toes as well as in the great toe; secondary movements should be reported as well as primary ones. The statement "Babinski sign present" or "absent is an inadequate description of the plantar reflex.

**Tell your patients the answer! Ask us for your copy of "What About Heart Disease?"**

### Recognition of Cancer of the Uterus in its Earlier Stages

The importance of timely recognition and the removal of precancerous lesions in relation to malignant growths of the cervix uteri is generally accepted. Among these precancerous lesions, however, leukoplakia of the cervix has not yet received the widespread attention it deserves.

In *J.A.M.A.*, Dec., 5, 1931, Dr. F. Emmert of St. Louis, calls attention to an appliance designed by Hinselmann, of Germany, which enables one to inspect the cervix more thoroughly than has been possible heretofore and to detect even slight alterations which otherwise would remain undiscovered. This apparatus, which is called the colposcope by its originator, consists essentially of a pair of binoculars mounted on an adjustable upright. These binoculars have a focal range of about 2 feet and are equipped with several sets of lenses that magnify the object from 10 to 30 times. The binoculars carry in front a small electric bulb, which projects a beam of intense light and is connected by way of a rheostat with the nearest electric socket; when the cervix is exposed in a speculum, the surface of the vaginal portion can be studied carefully with satisfactory illumination and the magnification renders even the most minute lesions visible.

With this instrument, Hinselmann has examined all his patients in a routine manner and discovered an unexpectedly great frequency of leukoplakias on the cervix, namely, 1 out of every 114 patients examined.

The actual transition into carcinoma could be well observed in a case of leukoplakia which was discovered by the author by means of the colposcope and which he shortly describes. This observation fully confirms Hinselmann's contentions that the colposcope renders possible the diagnosis of the earliest stages of cancer of the cervix.

## NEW · BOOKS

*Don't read to swallow; read to choose, for  
'Tis but to see what one has use for.—IBSEN.*

### Sollmann: Pharmacology

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland, Fourth Edition, Thoroughly Revised. Philadelphia: W. B. Saunders Company. 1932. \$7.50.

In the United States, Sollmann's Manual of Pharmacology is recognized as the leading text and reference book on the subject, due not only to its completeness but to its conservatism in describing the actions and uses of drugs.

The present (fourth) edition has been revised chiefly in those fields in which there has been definite advance. The barbiturates, bismuth, hormones and vitamins are some of these.

As stated by the author in the preface, it has been the dominant object of this manual to furnish medical students, including interested practitioners, an outline of the current conceptions of the actions of drugs, especially from the point of view of their practical importance in medicine. Even with this restriction, the data of pharmacology comprise so many details, that it appeared advisable to make a definite distinction in the text, presenting in ordinary type a fairly concise and connected story of the facts and explanations that deserve study for their direct bearing on medical practice, or for a sound understanding of the subject; and relegating to smaller type the data of less frequent use, or of less immediate importance, which would only be consulted as special occasions arise.

This arrangement has been carried out in the book; it conserves space and at the same time enables the reader to pass over less important details.

There is an extensive bibliography of references at the end.

### Ahlsweide: Skin Diseases

PRACTICAL TREATMENT OF SKIN DISEASES; With Special Reference to Technique. By Eduard Ahlsweide, M.D., New York and Hamburg. Formerly Assistant Physician, University Skin Department, Direction of Prof. Unna, Eppendorf Hospital, Hamburg; etc. 77 Illustrations. New York: Paul B. Hoeber, Inc. 1932. Price \$12.00.

The object of the author is to provide a practical manual for the treatment of skin

diseases suitable for the use of the busy physician. As diagnosis is necessary, the more important symptoms and salient features of each disorder are mentioned, also such clinical facts and pathologic connections as might be helpful.

The first part of the volume deals with general considerations of the therapy and management of skin diseases. The mode of action of the more important remedies is indicated. The second part deals with individual diseases of the skin, these being arranged in alphabetical order. The more important conditions are preceded by the main facts regarding symptoms and etiology, and a synopsis of various treatments then follows. Special prescriptions and a formularly are given at the end of the book.

As a pupil of Unna, the author very naturally leans to the precepts and practice of his teacher and others of the German school; but he does not hesitate to mention French, American and other dermatologists whose methods have been generally approved.

The book is a practical one which should be a great help to the general practitioner, if he can diagnose correctly the particular skin condition—a matter which is not always easily accomplished, even by the specialist.

### Graves: Foods in Health and Disease

FOODS IN HEALTH AND DISEASE. By Lulu G. Graves, Consultant in Nutrition and Diet Therapy; Formerly Professor of Home Economics, Cornell University; Formerly Associate Professor of Home Economics, Iowa State College; Formerly Chief Dietitian at Michael Reese Hospital, Chicago, etc. New York: The Macmillan Company. 1932. Price \$3.50.

The interest taken by the general public in health and nutrition is reflected by the number of popular books on these subjects which have appeared in recent years.

The present volume gives more attention than the usual book of this kind to the production and transportation of foods, their care in the home and in markets and their dietetic value. The commoner foods receive particular attention.

The first section, with eleven chapters, is devoted to foods in health: it deals with the various classes of foods, and accessories including preservation and nutritive values.

The second section deals with food in diseases and gives suitable diets for particular conditions. There are nine short chapters.

The book has been written from a lay

standpoint and there are no technicalities which cannot be easily understood by any intelligent person. It should be of value to housewives and to all who are considerate of their food from a hygienic standpoint, as well as to those in any way concerned with food supplies, including dietitians and nurses.

### Paton: Prohibitionism

PROHIBITING MINDS AND THE PRESENT SOCIAL AND ECONOMIC CRISIS. By Stewart Paton, M.D., *Lecturer on Psychiatry, Johns Hopkins University, Baltimore.* New York: Paul B. Hoeber, Inc. 1932. Price \$2.00.

This little volume will awake responsive echoes in the minds of the many who regret to observe that the tendency, in this country of late, has been toward abrogating personal control and responsibility and turning the regulation of conduct over to the State.

The author's thesis is that every well-ordered human being is, or should be, peaceful, temperate and sane, and he contends that the epidemic of prohibitionism (not merely the outlawing of alcoholic liquors), which has overwhelmed us during the past decade or two, has led to a widespread development of belligerency, intemperance (in the broadest sense) and insanity. He pleads for a return to a rational and self-regulated way of living.

The pages bristle with such epigrams as:

"Prohibitionism is a sign that we do not know how to handle the power plant."

"Prohibition is an effective method of producing standardized mediocrity."

"Prohibition represents a pathologic hygiene of idealism."

One's only regret is that Dr. Paton did not say his say in fewer words. The words are good, but their punch would have been stronger if there had been fewer of them.

This book is cordially recommended to all open-minded, thinking people who enjoy the stimulus of a powerful mental shower bath and relish pungent and clever writing.

### Welch: Clinical Interpretation of Laboratory Reports

CLINICAL INTERPRETATION OF LABORATORY REPORTS. By Albert S. Welch, A.B., M.D., *Clinical Instructor in Medicine in the University of Kansas School of Medicine in Kansas City, Kansas; Director of the Laboratory of the Alfred Benjamin Dispensary, and Attending Surgeon of St. Joseph's Hospital in Kansas City, Missouri, etc.* With Sixteen Illustrations and a Frontispiece in Color. Philadelphia: P. Blakiston's Son & Co., Inc. 1932. Price \$4.00.

The clinician should not place the laboratory technician in the difficult position of submitting interpretations which he is not qualified to make. It is the clinician's business to diagnose disease from his knowledge of the patient, helped, so far as he might be, by the laboratory findings.

In 16 chapters, the author deals with the various laboratory procedures associated with the examinations of blood, urine, smears, cultures, gastric contents, cerebrospinal fluid, etc.

The findings are discussed in association with different pathologic conditions and suggestions made regarding the points of differential exclusion of these conditions.

The author's experience, both as a laboratory man and as a practitioner, helps him to judge diagnostic questions from both sides and to span the gulf connecting the laboratory with clinical practice.

The book must be regarded as a worthy attempt to deal with a large and important subject and should be of value, not only to practitioners, but to students in applying laboratory findings capable of various interpretations. There is a bibliography of over 200 references at the end.

### Surgical Clinics of North America

THE SURGICAL CLINICS OF NORTH AMERICA. *Lahey Clinic Number. Volume 12, Number 3, June, 1932. Philadelphia & London: W. B. Saunders Company. Issued serially one number every other month. Per clinic year (February 1932 to December 1932). Paper \$12.00; Cloth, \$16.00.*

The June, 1932, number of the *Surgical Clinics of North America* is devoted to contributions from the Lahey Clinic, Boston. There are 35 papers, by 18 contributors.

The opening papers deal with biliary tract conditions and jaundice, with contributions from Drs. F. H. Lahey, H. M. Clute, J. R. Veal, S. A. Wilkinson and R. H. Overholt. A short, but good, clinical paper on the "Control of Blood Pressure in Spinal Anesthesia" is given by Dr. L. F. Sise. Other articles of clinical value to general practitioners are: "The Diagnosis of Gastrojejunal Ulcer," by Dr. E. D. Kiefer; "Kidney Infections without Localizing Symptoms," by Dr. Jas. B. Hicks; "Fracture of the Patella" and "Chronic Arthritis," by Dr. G. E. Haggart; "Choking as a Symptom of Goiter," by Dr. L. M. Hurxthal; and "Operative Injury to the Recurrent Laryngeal Nerve," by Dr. F. H. Lahey.

The general surgeon will here obtain many hints of advanced clinical practices, as carried out in the larger clinics.

### Bumpus, Grenshaw and Clark: Surgery of the Urinary Tract

MINOR SURGERY OF THE URINARY TRACT. By Hermon C. Bumpus, Jr., Ph.B., M.D., M.S. in Urology, F.A.C.S., *Section on Urology, the Mayo Clinic and Associate Professor of Urology, The Mayo Foundation. With a chapter on Caruncles by John L. Crenshaw, M.D., Section on Urology, the Mayo Clinic and Associate Professor of Urology, the Mayo Foundation, and a chapter on Postoperative Care by Anson L. Clark, M.E., M.D., Section on Urology, the Mayo Clinic, Rochester, Minn.* With 57 Illustrations. Philadelphia and London: W. B. Saunders Company. 1932. Price \$3.00.

This is one of the Mayo Clinic Monographs and deals with the minor surgery of the urinary tract, especially by endoscopic and transurethral instrumentation. Urethral lesions, prostatic hyper-



trophy and carcinoma, tumors and other conditions of the bladder and ureteral calculi have chapters devoted to them. The kidney is not dealt with. The descriptions are concise and to the point.

This small book is one for the urologic specialist, accustomed to work with delicate instruments, rather than for the general surgeon or practitioner. It gives the most advanced methods now in use in the Mayo Clinic.

### Clinical and Social Aspects of Phthisiology

STUDI CLINICI E SOCIALI DI TISIOLOGIA. Volume III. O. P. Poliambulanza "Giuseppe Ronzoni," Milano: Istituto di Tisiologia. 1932.

Volume III of the publications of the Institute of Phthisiology, of Milan, Italy, contains a number of papers by Italian authors on the various clinical and social aspects of tuberculosis. One of the matters referred to here might, perhaps with good effect, be adopted in the United States: namely the disinfection, by the Public Health Department, of homes which have harbored a case of tuberculosis.

### Collected Papers of Mayo Clinic

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B.A., M.A., M.D. Volume XXIII, 1931. Philadelphia and London: W. B. Saunders Company. 1932. Price \$13.00.

The twenty-third annual volume of *Collected Papers of the Mayo Clinic and the Mayo Foundation* contains 99 full reprints, 36 abridged and 43 abstracts of papers published during 1931 by members of the medical and surgical staffs of these institutions. In addition, 399 other publications are represented by title only. The papers selected wholly or partly for publication here are those which are deemed to be of most interest to general practitioners.

These annual volumes are looked forward to by many as presenting some of the best contemporary work in scientific and clinical medicine, and the present volume seems to be entirely up to the high standard of those previously published.

### Causey: Parasites of Man

UNINVITED GUESTS. By David Causey, Ph.D., Associate Professor of Zoology, University of Arkansas. With Forty-Four Illustrations after Drawings by the Author. New York: Alfred A. Knopf. 1932. Price \$2.00.

This is a pleasantly written little book for lay readers, dealing with the parasites which infest the human body. It tells how they get in, how they manage to live, what harm they cause and something about their structure and social habits.

The agreeable and sometimes humorous style of the author should prove attractive and popular; he is certainly instructive.

### Fischer: Biographic Lexicon

BIOGRAPHISCHES LEXIKON der hervorragenden Ärzte der letzten fünfzig Jahre. Herausgegeben und bearbeitet von Dr. I. Fischer, Privatdozent an der Universität Wien. Zugleich Fortsetzung des Biographischen Lexikons der hervorragenden Ärzte aller Zeiten und Völker. Erster Band. Aaser—Komoto. Mit 80 Bildnissen. Berlin & Wien: Urban & Schwarzenberg. 1932. Price RM 37.50 geh; 42.—geb.

This lexicon gives short biographies of distinguished physicians of all countries who have died within the past 50 years. The present volume I includes names from Aaser to Komoto. It continues the author's previous biographic lexicon of deceased physicians of all countries and time.

The book is beautifully and strongly bound and the typography is excellent.

### Abderhalden: Biologic Research Methods

HANDBUCH DER BIOLOGISCHEN ARBEITS METHODEN. Unter Mitarbeit von 900 bedeutenden Fachmännern herausgegeben von Geh. Med. Rat Prof. Dr. Emil Abderhalden, Direktor des Physiologischen Institutes der Universität Halle a. d. Saale. Abt. IV. Angewandte chemische und physikalische Methoden, Teil 6, 2. Hälfte, Heft 5 Berlin and Wien: Urban & Schwarzenberg. 1932. Price RM 14.—.

Section 5 of the second half of Part 6, Vol. IV, of Abderhalden's mammoth system of biologic research methods, includes five contributions on procedures of investigating the functions of the digestive apparatus. These embrace gastrophotography, viscerography, experimental fistula, exteriorization of organs and demonstration of gastric flora. These contributions come from recognized authorities on the technics of the methods.

### Singer: Diseases of the Musical Profession

DISEASES OF THE MUSICAL PROFESSION: Systematic Presentation Of Their Causes, Symptoms and Methods of Treatment. By Kurt Singer, M.D. Translated from the German By Wladimir Lakond, New York, Greenberg: Publisher. 1932. Price \$3.00.

Dr. Kurt Singer, who is a musician, as well as a physician, is qualified to write sympathetically of the diseases peculiar to those who follow the musical profession. These include the mental abnormalities more or less peculiar to musicians; the occupational neuroses—violinists' and pianists' cramp—vocal apparatus diseases, and the like.

The two last chapters are devoted to treatment of these special classes of diseases and to the healing effect of music—the hygiene of playing.

The book is of interest to all connected with the musical profession and to physicians interested in occupational diseases.

## MEDICAL · NEWS



© Keystone Underwood.

### Oldest Practicing Woman Physician

On July 23, 1932, **Dr. Millie J. Chapman**, of Springboro, Pa., reached her eighty-fourth year. She is believed to be the oldest practicing woman physician in the United States, with fifty-eight years of professional work to her credit and still treating patients every day. A community celebration in her honor was held on her birthday.

### Health Education Institute

The first Institute on Health Education to be conducted by the American Public Health Association will be held at the Hotel Willard, Washington, D. C., Oct. 22, 23 and 24, immediately preceding the annual meeting of the Association, on Oct. 24.

The purpose of the Institute is to pro-

vide instruction in methods of health education to a limited number of persons actively engaged in that work. A comprehensive program, covering every current problem in public health administration and technic, has been arranged.

Full information may be obtained from the American Public Health Association, 450 Seventh Avenue, New York City.



Portable air-cooling unit.

Courtesy, Carrier Corp.

### Portable Air-Cooling Unit

A compact, portable air-cooling unit, using melting ice as the cooling medium, has recently been perfected, designed for use in offices, hospitals and wherever the central type of heavy-duty air-conditioning installation is too large for immediate requirements.

The new cooling device will lower the temperature of a room approximately 10 degrees and, as the hot room air is cooled by contact with the melting ice and a series of metal grids upon which the ice rests, it is dehumidified.

The unit consists of a cabinet on wheels standing four feet three inches in height by two feet in width and made of sheet

steel finished in grained mahogany (see figure). The weight of the cabinet, without ice, is 400 pounds. It holds 300 pounds of ice, this quantity being sufficient to last about five hours in hot weather. A small, electric-driven blower, operated from a light socket, draws the air from the room into the cabinet and over the metal surface on which the ice rests, thence back into the room through outlets in the top of the cabinet. The amount of cooling and direction of air delivery can be regulated by adjusting a set of shutters in the outlets. The capacity is 400 cubic feet of cooled air per minute.



© Underwood and Underwood.

### Medical Director for Olympic Games

**Dr. Sven Lokrantz**, Director of the Los Angeles city schools, who was knighted by the King of Sweden for his work in child welfare, received a new honor when he was selected by members of the 10th Olympic Committee to serve as medical director for the 1932 Olympic Games. Dr. Lokrantz is president of the American Association of School Physicians and of the Southern California Public Health Association.

### Studying Costs of Medical Care

A Conference on the Costs of Medical Care met in Washington, D. C., early in June, to round up and bring to a head the information collected during the past

four or five years by a distinguished committee dealing with the same subject.

The objects of the Conference are to seek means for assuring adequate medical attention for all persons and to stabilize the incomes of physicians.

One hopes that the outcome of these deliberations will not be a recommendation of State Medicine.

### International Medical Congress

With steamship rates and European hotel charges at the lowest level reached for many years, this ought to be a good time for physicians to attend the International Medical Congress, to be held in Vichy, France. September 19 to 22, inclusive, 1932.

For full particulars of total-cost tours for this occasion, write to W. F. Crum, Manager Cunard Line, 346 N. Michigan Ave., Chicago.

### Book Publishers Consolidate

In October, 1931, Gilbert C. Wood, the last surviving owner of William Wood and Co., publishers of many medical books, died and the business has recently been purchased by the Williams and Wilkins Co., of Baltimore. The old address of Wm. Wood and Co., (150 Fifth Ave., New York City) will be retained for the present.

### Transmission of Endemic Typhus Fever by Fleas

Several months ago the announcement was made by the United States Public Health Service that endemic typhus fever, which has been recognized for several years in the United States, had been shown to be transmitted by fleas.

Additional studies indicate that the rat flea is the agent that transmits this condition. This work has been proven by laboratory experiments and by field studies. There seems to be ample evidence that endemic typhus fever is spread from rat to rat by the rat flea, and from rat to man by the same agency.

## Send · For · This · Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE AND SURGERY, North Chicago, Ill., will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is

to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physician's use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment, or medicinal supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentist, medical student, or registered pharmacist, or a nurse.

- |       |   |       |  |
|-------|---|-------|--|
| B-47  | Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.                        | B-610 | Bischoff Pharmaceutical Specialties. Ernst Bischoff Co., Inc.  |
| B-392 | Arthritis. Its Classification and Treatment. Battle & Co.                                   | B-611 | Vera-Perles of Sandalwood Compound. The Paul Plessner Company.   |
| B-480 | The Incidence of Eczema in Skin Diseases in about 20 percent. Bilhuber-Knoll Corp.          | B-612 | Taurocol. The Paul Plessner Co.  |
| B-504 | Bedtime Nourishment. Mellin's Food Co.  | B-613 | Specific Urethritis—Gonosan "Riedel." Riedel & Co., Inc.   |
| B-570 | Urinary Tests and Color Charts for Practical Use in Office Diagnosis. Od Peacock Sultan Co. | B-617 | Vitamin D needed for proper calcification and tooth health—at all ages—recent experiments show. Standard Brands, Incorporated. |
| B-571 | Detoxification in the Treatment of Intestinal Infections. The Wm. S. Merrell Company.       | B-632 | Foxglove Farm, New Thoughts on Digitalis Action and Dosage. Upsher Smith Co.   |
| B-586 | HVC (Hayden's Viburnum Compound). New York Pharmaceutical Co.                               | B-635 | Niazo, Schering, a Modern Genito-Urinary Antiseptic for Oral Use. Schering Corporation.  |
| B-587 | Ethical Health Bulletin No. 1, New York Pharmaceutical Co.                                  | B-636 | Science's latest contribution to female sex hormone therapy—Progynon. Schering Corporation.                                    |
| B-596 | The Pneumonic Lung. Its Physical Signs and Pathology. The Denver Chemical Mfg. Co.          | B-642 | Ergoapiol (Smith) and Glykeron. Martin H. Smith Co.  |

- B-647 The Modern Status of Diabetes. Battle & Co. Chemists' Corporation.
- B-669 The Illinois Post-Graduate Medical School Bulletin. The Illinois Post-Graduate Medical School, Inc.
- B-672 Inflammation and Congestion. Numotizine, Inc.
- B-679 The Gastric Temperament — Cal-Bis-Ma. William R. Warner & Co., Inc.
- B-691 "Storm" Binder and Abdominal Supporter. Katherine L. Storm, M.D.
- B-695 High Blood Pressure, Its Causes and Symptomatic Treatment. The Drug Products Co., Inc.
- B-696 Pit-Ren for Pneumonia, Asthma and Related Allergic Reaction. The Drug Products Co., Inc.
- B-699 Rheumatism Down the Ages. Schering & Glatz, Inc.
- B-713 From "Poultess" to "Cataplast—Plus." Numotizine, Inc.
- B-714 Summer Acidosis — Alka-Zane. William R. Warner & Co., Inc.
- B-715 The Male Sex Hormone—Lydin Solution Standardized. The Harrower Laboratory, Inc.
- B-716 Anemia, Pernicious and Secondary—Hepar-nucleate (Harrower). The Harrower Laboratory, Inc.
- B-717 Adreno-Cortin, An Adrenal Cortex Hormone of Proved Physiological Activity. The Harrower Laboratory, Inc.
- B-718 For more than 25 years the Dental and Medical Profession have recommended Revelation Tooth Powder. August E. Drucker Company.
- B-719 Tetanus-Perfringens (Tetanus Gas-Gangrene) Antitoxin. The National Drug Company.
- B-720 National Hay Fever Antigens. The National Drug Company.
- B-721 Endo-Ciagen Effective in Anemias and Leukemias. Intravenous Products Co. of America, Inc.
- B-722 Endo-Dermol Effective in Eczemas, Itching and Various Skin Disorders. Intravenous Products Co. of America, Inc.
- B-723 Endo-Copfersan (Copper, Iron and Arsenic) for Intramuscular Administration. Endo Products, Inc.
- B-724 An Unusually Palatable Form of Alkaline Medication. The BiSoDol Company.
- B-725 The Hormone—June, 1932. The Harrower Laboratory, Inc.
- B-726 The Acid-Base Balance of the Body; Its Relation to Health and Disease. The BiSoDol Company.
- B-727 Ampoule Medication. E. Fougera and Co., Inc.
- B-728 Drops That Tell a Story—Agarol. William R. Warner & Company, Inc.